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SANITARY SUNDAY EDITION

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EDITORIAL

SANITARY SUNDAY—APRIL 28, 1912.

In accordance with an annual custom which we have followed for the last two years, we are asking the ministers of the gospel to place special emphasis on the question of community or public health in their sermons on April 28th.

From time to time, we have called attention to the many phases of this vital problem which should serve to enlist the coöperation of the Christian Church. The Bible is full of texts bearing on the problem of public health. One of the names by which the Master was best known, the Great Physician, is especially significant, for He was never known to turn a deaf ear to the physically afflicted. The business world pushes on, little heeding the fallen by the wayside, as the crowd surged by the poor blind beggar and bade him hold his peace and trouble not the Master; but as He heard the plea of Bartimeus, so will His followers, the organized Christian forces, respond to the inarticulate appeal of 20,000 North Carolinians dying each year from preventable diseases, and 40,000 of their neighbors needlessly bed-ridden for the entire year from the same class of diseases.

A GROWING CHURCH AND A SICK PEOPLE.

The Bureau of the Census of the United States Government shows that during the last fifty years there has been a steady and healthy growth of the Christian Church, both in number of churches and value of church property. The figures show that the church has, without a single intermission, grown more rapidly than the population, and the seating capacity with one single decennial decline which followed the Civil War, has been more rapid than the growth of the population. The figures compiled from the Census Report are as follows:

	1850.	1860.	Growth, Per Cent.	1870.	Growth, Per Cent.
Communicants					
Seating capacity	14,234,825	19,128,751	34.3	21,665,062	13.2
Value church property	$87,328,932	$171,397,932	96.3	$354,483,581	106.8
Number of churches	38,061	54,009	41.9	72,459	34.2
Population	23,191,876	31,443,321	35.5	38,558,371	22.6

	1890.	Growth, Per Cent.	1906.	Growth, Per Cent.
Communicants	20,597,954		32,936,445	60.4
Seating capacity	43,560,063	701	58,536,830	34.4
Value church property	$679,426,489	91.7	$1,257,575,867	85.1
Number of churches	165,151	127	212,230	28.5
Population	62,947,714	63	84,246,252	17.8

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Coincident with this growth of the church, the number of prisoners in the United States has increased from 29 per hundred thousand of the population in 1850 to 125 per hundred thousand in 1904. William E. Kellicott, in his book, "The Social Direction of Human Evolution," says about these statistics of prisoners:

> "Not all of this increase can be attributed to more rigid enforcement of the law or raised standards of morality; there is some reason for thinking that whatever change there has been in these respects has tended to have the opposite effect. We should note, in considering such data as these, that the penologist generally assumes that of the total number of offenders, actually only about 10 per cent are in prison at any one time."

In the United States murders and homicides per hundred thousand of the population have nearly trebled in the last fifteen years. Insanity increased in the United States from 183 per hundred thousand of the population in 1880 to 225 per hundred thousand in 1903. We have in this civilized country, all told, approximately three million defective people—insane, feeble-minded, blind, deaf, dumb, paupers, juvenile delinquents, and criminals. That is to say, one person out of every thirty of our population is defective. Take our country as a whole, about 5 per cent of the population are at some time in their lives dependent upon public charity; that is to say, that we have between four or five million paupers in our country; and it is estimated by sociologists of National repute that ten million of our population are below the poverty line; that is, their physical efficiency is under par on account of deficient food and poor clothing.

Divorce may be considered alongside of these other symptoms of National diseases, because divorces disintegrate the very unit in the structure of civilization. In the United States one out of every twelve marriages results in divorce; and this country, our blood-bought country in which we have so much pride, has more divorces than all the rest of the civilized world. In the State of Washington there is one divorce in every four marriages; in Montana one to five; in Colorado, Texas, Arkansas, and Indiana one to six; in California and Maine one in seven; in New Hampshire, Missouri, and Kansas one in eight, and in the city of San Francisco one in three. From 1867 to 1886, twenty years, the population of the United States increased 60 per cent; divorces 157 per cent. From 1887 to 1906, the next twenty years, the population increased 50 per cent; the divorces 160 per cent. For 1905 the following statistics are available:

*United States	67,976	Great Britain and Ireland	821
Germany	11,147	Denmark	540
France	10,860	Sweden	448
Austria-Hungary	5,785	Norway	408
Switzerland	1,206	Australia	339
Belgium	901	New Zealand	126
Holland	900	Canada	33
Italy (1904)	859		

*Quoted from "Sociology and Modern Social Problems," by Ellwood.

A well-known writer says:

> "Thus we are apparently within measurable distance of a time when, if present tendencies continue, the family, as a permanent union between husband and wife, lasting until death, shall cease to be. At least, it is safe to say that in a population where one-half of all marriages will be terminated

by divorce the social conditions would be no better than those in the Rome of the decadence. We cannot imagine such a state of affairs without the existence alongside of it of widespread promiscuity, neglect of childhood, and general social demoralization."

What is the explanation of the apparent spiritual advancement coincident with moral and physical decline? Ignorance? Yes, of a kind, but not the kind due to the lack of growth of educational work as conceived by the teachers of the last thirty years, for the census shows that there has been a continued decrease of illiteracy, from the time the first census was taken in regard to illiteracy, in 1880, from 17 illiterates per hundred population in 1880 to 13 illiterates per hundred in 1890 and 10 illiterates per hundred in 1900. There is a kind of knowledge, however, that the schools have not taught and that the race is sadly deficient in, and it is undoubtedly responsible for much of the deterioration of to-day. That all-important knowledge has to do with the laws of life, the appreciation of the laws of heredity and of bad environment on the functions of the human body. Our educational system in the past has busied itself not too much with the development of the human mind, but too little with the development of the human body.

Nor can we explain the array of facts above cited on a basis of economic conditions. Here it is interesting to note that we have statistics showing the growth of total wealth and *per capita* wealth in the United States for the last fifty years. But our economic condition depends not upon *per capita* wealth, but upon the *distribution* of wealth. One man, or a few men, could own the entire wealth of the country without changing in the least the *per capita* wealth; but the economic situation that would result from such concentration of wealth would profoundly influence the welfare of the race. And yet, with all the noise the politicians are making about the concentration of wealth, the United States Government, so far as we can ascertain—and we have gone to the highest authorities, and a number of them—cannot state on a basis of facts and figures anything regarding the distribution of wealth in this country. The absence of such facts reflects upon our system of government. However, I think we may safely conclude that the economic situation in the United States has at least not deteriorated during the last fifty years, and, in all probability, has much improved, so that the symptoms of National diseases, above cited, would not be ascribed to our economic conditions.

Communicable diseases, the only kind of diseases that we have to consider from a public health viewpoint, depend upon the existence of some common bond existing between those who become diseased. In a small community or city, this bond of union exists in the nature of some of the common utilities, such as schoolhouses, churches, postoffices, laundries, swarms of flies, etc. In larger collections of people the only bonds of union are customs, habits of thought, and ideals. These three things affect large bodies of people, and if the customs are improper, the habits of thought bad, and their ideals not in accordance with natural (which is also divine) laws, then you may expect abnormalities in the National life. The educational system of our country has confessed its sin already in the almost universal recognition among our educational leaders of the importance of the physical in its relation to the mental. Medical inspection of schools is being adopted in all progressive communities, and the laws of hygiene and sanitation are being taught in the public schools as never before. As this knowledge becomes more widely disseminated the present race will take better care of itself, will become more efficient physically, have better homes, think better thoughts, and will be better morally. Again, let us remember, it takes a good animal to make a good man.

Still we are lacking in the development of an appreciation of the most important fact in its relation to defects of all classes and crimes, namely, the factor of heredity. The laws of heredity are just as much laws of divine origin as the ten commandments, and no race can prosper that disregards them. I give two concrete examples here, quoting from "Social Direction of Human Evolution," by William E. Kellicott, typical of the effect of these laws which Darwin had in mind long ago when he wrote:

> ". . . . except in the case of man himself, hardly any one is so ignorant as to allow his worst animals to breed."
>
> "One of the best known families of this type is the so-called 'Jukes' family of New York State, so carefully investigated by Dugdale. This family is traced from the five daughters of a lazy and irresponsible fisherman, born in 1720. In five generations this family numbered about 1,200 persons, including nearly 200 who married into it. The histories of 540 of these are well known and about 500 more are partly known. This family history was easier to follow than are some others because there was very little marriage with the foreign-born—'a distinctively American family.' Of these 1,200 idle, ignorant, lewd, vicious, pauper, diseased, imbecile, insane, and criminal specimens of humanity, about 300 died in infancy. Of the remaining 900, 310 were professional paupers in almshouses a total of 2,300 years (at whose expense?); 440 were physically wrecked by their own diseased wickedness; more than half of the women were prostitutes; 130 were convicted criminals; 60 were habitual thieves; 7 were murderers. Not one had even a common school education. Only 20 learned a trade, and 10 of these learned it in State prison! They have cost the State over a million and a quarter dollars, and the cost is still going on. Who pays this bill? What right had an intelligent and humane society to allow these poor unfortunates to be born into the kind of lives they had to lead, not by choice, but by the disadvantage of birth?"
>
> ". . . . let us finally return to the other side of society and look at a summarized statement of the Edwards family given by Boies and drawn from Winship's account of the descendants of Jonathan Edwards. One thousand three hundred and ninety-four of his descendants were identified in 1900, of whom 295 were college graduates; 13 presidents of our greatest colleges; 55 professors in colleges, besides many principals of other important educational institutions; 60 physicians, many of whom were eminent; 100 and more clergymen, missionaries, or theological professors; 75 were officers in the army and navy; 60 prominent authors and writers, by whom 135 books of merit were written and published and 18 important periodicals edited; 33 American States and several foreign countries, and 92 American cities and many foreign cities, have profited by the beneficent influence of their eminent activity; 100 and more were lawyers, of whom one was our most eminent professor of law; 30 were judges; 80 held public offices, of whom 1 was Vice President of the United States; 3 were United States Senators; several were governors, members of Congress, framers of State constitutions, mayors of cities, and ministers to foreign courts; one was president of the Pacific Mail Steamship Company; 15 railroads, many banks, insurance companies, and large industrial enterprises have been indebted to their management. Almost if not every department of social progress and of the public weal has felt the impulse of this healthy and long-lived family. It is not known that any one of them was ever convicted of crime."

What we need in this country is greater stress on the importance of the physical, and if the churches will devote themselves a little more to the *"here"* and a little less to the *"hereafter"*; if preachers would give more attention to the means, and possibly a little less attention to the end, we believe that the evidence of the racial deterioration above cited, which casts its shadow on a growing church, would be less noticeable.

THE PLACE OF THE PHYSICAL IN LIFE.

In the creation, according to Moses, the inorganic world, the vegetable world, the lower animal world, and finally man were created, in the order given. According to the same inspired writer, in the creation of man himself, his physical parts were first formed, and to them the higher mental and spiritual faculties were added. In the creation by evolution, the same order, from lower to higher form, takes place—from the worm of the dust to a place a little lower than the angels. In embryonic or prenatal development, the same order from the lower to the higher obtains—the body framework, the heart, the blood vessels, the alimentary organs, the nervous system, and of the last system, its higher part, the mind, develops and continues its growth long after the other less highly organized structures have reached their maturity. It is God's way, according to both inspiration and nature, to make the physical a preliminary essential to the spiritual. From a public point of view, which sees the *average* human being and not the exception, the truth of Herbert Spencer's saying, that it takes a good animal to make a good man, is fully realized.

WHAT THE COUNTIES ARE DOING.

LENOIR COUNTY.

The County Board of Health at their February meeting, under section 9, chapter 62, Public Laws of 1911, enacted several important regulations for their county.

A regulation requiring the vaccination of all children attending the public schools was adopted.

A regulation requiring the installation of sanitary privies of the type suggested by the State Board of Health at all public schools was adopted.

A third progressive and commendable step was the following regulation:

> "That no general drinking cup or dipper shall hereafter be allowed to be attached to, maintained, or remain as a part of any public place for supplying drinking-water within the limits of the county of Lenoir, including especially all street fountains, pumps, and water-supply places for public schoolhouses within said county or any city or town thereof."

So far as we know, Lenoir County is the first county in this State to take this step.

LEE COUNTY.

The following letter from Dr. J. P. Monroe, the County Superintendent of Health, shows an active interest and definite progress in the health work of Lee:

DR. W. S. RANKIN, *Raleigh, N. C.*

DEAR SIR:—We held a meeting of the Board of Health yesterday instead of the regular January meeting. It was decided to carry out the State law relative to smallpox and not undertake the quarantine. The order issued last year to the school board, to have sanitary privies built at each public school building, was ordered to be carried out during the summer months. An unanimous request was made to the county commissioners that they build a county home. It was ordered that the commissioners contribute one-half and Jonesboro and Sanford the other half of the necessary funds to secure Dr. Ferrell for two weeks in the spring to give hookworm treatment. I feel sure that the county commissioners and the two towns will supply the necessary funds for this treatment. Will write you as soon as I can get a hearing from them.

Yours fraternally,
(Signed) J. P. MONROE.

CUMBERLAND COUNTY.

The county commissioners have bought a site two and one-half miles from Fayetteville for a new county home, the plans for which are now being drawn. The county home will be thoroughly modern in construction, arrangement, and equipment. It will include suitable quarters for treating tuberculosis, and will also be provided with wards where the indigent sick of the county may be cared for.

HAYWOOD COUNTY.

The County Board of Health, with the approval of the County Board of Commissioners, have employed Dr. J. R. McCracken, their County Superintendent of Health, to give two weeks of his entire time this fall to speaking in different sections of the county on the subject of preventable diseases.

We believe that Haywood is the first county to have taken such action as this, and we commend her good example to other county boards of health.

JOHNSTON COUNTY.

The County Board of Health, conjointly with the County Board of Commissioners at the February meeting of the Board, passed resolutions requiring the County Superintendent of Health to make quarterly inspections of all the incorporated towns of the county. During the inspection the health officer is to visit the schools, examine the sanitary conditions of the schoolrooms and grounds, make medical inspection of apparently physically defective children, and to report the results of these inspections regularly to his County Board of Health. For these services he is to be paid $4 *per diem* and 62½ cents per mile, one way.

This is another important step in the right direction that other counties can well pattern after.

MESSAGES FROM THE FRONT IN THE FIGHT AGAINST SMALLPOX.

Dr. D. A. Dees, County Superintendent of Health of Pamlico County, writes: "The posters sent me concerning smallpox have been thoroughly distributed throughout the county. A great many people have been vaccinated—negroes, even, applying for vaccination. I shall do all in my power to make our present method of handling smallpox a success. . . . There are no more cases than we had when we had quarantine, and not one-half the trouble. Three places in the county have cases, Oriental, Bayboro, and Vandemere. There has been more voluntary vaccination than in all the epidemics we have had in former years. Fortunately, we were able to keep the commissioners from establishing quarantine. It is only a question of time, in my mind, when North Carolina will stay clear of smallpox if we keep the present law, and the money we have spent in the past will be used for more important purposes than in trying to protect those who will not protect themselves."

Dr. J. E. Malone, County Superintendent of Franklin County, writes: "Your plan of education in the handling of smallpox is working well. The people are sending for me to vaccinate them, and that is a good sign. I have had our smallpox posters put up in different parts of the county and I have ordered fresh points. The people begin to understand that we are not going to quarantine, but vaccinate."

Dr. William S. Jordan, County Superintendent of Health of Cumberland County, writes: "From the clippings inclosed you will observe that smallpox is to a great extent occupying the minds of our people just at this time. They are arranged in the order in which they appeared in the *Fayetteville Observer.*

"It is right amusing to note the nature of the comments in regard to quarantine and realize that in no sense has the critic grasped the meaning of abolishing the quarantine of smallpox in favor of vaccination, or, rather, the meaning of the law, that by abolishing quarantine general vaccination can be secured.

"During our present smallpox scare with no quarantine more than 1,500 people have been vaccinated in Fayetteville; whereas if we had had quarantine I am satisfied there would not have been 200 vaccinated."

Dr. A. C. Bethune, County Superintendent of Health of Moore County, writes: "In the last thirty days I have had eighteen cases [smallpox] in this county; twelve cases near Elsie, three cases near Pinehurst, and three cases in the neighborhood of Jackson Springs.

"From the three original cases brought into this county from Rockingham I had more than a hundred exposures, but only fifteen new cases, and these would not have occurred had patients been vaccinated in time.

"We have no quarantine regulations in this county for this disease, but we are vaccinating a good many. In the last two weeks we have vaccinated about three hundred people. I have been in the field every day, and have gone from house to house explaining the object of vaccination, and have met with splendid success. In the part of the county where we have this infection we had an entirely unvaccinated population, but they are interested and are offering themselves freely for vaccination. We will likely order vaccination for the school children at an early date, and in the meantime I am going from school to school and vaccinating all who offer."

THE McCULLERS CASE.

The McCullers case, recently decided in the Supreme Court of North Carolina in favor of the plaintiff, Dr. J. J. L. McCullers, and against the Wake County Commissioners, is important from a public health standpoint on account of the question of the State's interest and the State's authority in county health work being seriously involved. The opinion of the Supreme Court in this case, the position of the county commissioners, and the bearing of the case upon the public health work of the State, is published in this issue of The Bulletin. The controversy between Mr. B. C. Beckwith, the County Attorney for Wake County, who, of course, espouses the cause of the county commissioners, and the Secretary of the State Board of Health, who defends the Wake County Board of Health for its position in the McCullers case, and maintains the advantages of the control of county health work by nonpartisan county board of health, is given in full in this Bulletin.

A WORD TO HIS HONOR THE MAYOR.

For His Own Sake, for His City's Health, and for His State's Good Name, Please Read This: It May Pay You Handsomely.

The mayor of every municipality in North Carolina which has a population of 500 or over, according to the 1910 census, is held responsible by the State laws for the enforcement of chapter 722, Laws of 1909, as amended by the General Assembly of 1911, which requires the registration of *all* deaths occurring in his jurisdiction according to the rules prescribed under the aforesaid law. Section 5 of this chapter places his Honor under a penalty of from $10 to $50 for the nonenforcement of the law aforesaid. We respectfully request the careful reading of chapter 722, Laws of 1909, as amended by the General Assembly of 1911, and especially of the 5th section of the said chapter.

SOMEBODY IN DANGER.

We know that some of the municipalities of North Carolina are not registering all their deaths. *We now have on file in this office the absolute proof of deaths which have occurred in several registration municipalities for which we have received no death certificates. In one municipality we hold as many as ten unregistered deaths against the mayor.*

Now, we are not going to name the several towns referred to; this is to notify the mayors of these towns that it will be to their interest to have their local registrar review his work and to file certificates in this office of deaths that are unregistered and of which the State has not as yet taken official cognizance. The thing for each mayor to do is to make sure that his town or city is not one of those referred to.

Unless death certificates are filed in this office before the first day of May, 1912, covering the known deaths which we hold and which are unregistered, we shall appear before the first grand jury meeting in the county in which these municipalities are located, and ask for indictment of the mayor who is responsible for the violations of the State registration law. We are specifically commanded in section 3 of the aforesaid State law to perform this disagreeable duty; and we shall not fail to perform our duty because it is disagreeable. We sincerely hope that this notice will serve as a warning and that the mayors of the registration municipalities of this State will have the work of their local registrar reviewed, and, if unregistered deaths are found, to have death certificates filled out for them and filed with us before May 1, 1912.

THE IMPORTANCE OF A VITAL STATISTICS LAW.

Do not allow yourself for a single moment to indulge the thought that the value and the necessity of a vital statistics law cannot be established, and easily established, with the average jury. Do not conceive the idea, if you have never given the question of vital statistics any study, that this law is a mere matter of form or "red tape." It is essential to the health and the life of North Carolina people. This statement we can and will make good in the courtroom.

If you would appreciate the importance of this law, ask yourself how you would go about ascertaining the health of a town or community or State. Would you write some citizen of the place in which you were interested, and ask his opinion? Could you expect anything but a favorable opinion from one whose material advancement depended upon your favorable opinion in regard to the advantages of buying property in his city? What you would do, would be to write to the United States Bureau of the Census or to your State Board of Health and find out the average death rate from all causes and for certain diseases throughout the United States, secure comparative data from the town whose health conditions you are interested in, and by comparing the two, see exactly how the health conditions of the town in question compared with the average. Vital statistics are the means, and the sole means, of detecting the symptoms of a sick community or town. Take them away or make them inaccurate, and the sanitarian has nothing to guide him in recognizing disease politic, and certainly he cannot treat that which he cannot recognize. In short, vital statistics are to public health work what the symptoms of a disease are to the individual practitioner. When they are incomplete they give the impression of a healthy town when a sick town exists, and should be treated, with the ultimate effect of saving many human lives. Incomplete statistics are misleading; it is better not to be led at all than to be misled.

Not only do incomplete vital statistics place the mayor under penalty for violations of this law, and make it impossible to recognize and improve health conditions in his municipality, that is, to save the lives of his constituency, but these incomplete statistics endanger the standing of his State in the estimation of the civilized world. Most civilized countries, 60 per cent of the United States, including most of the Northern States and the progressive Western States, take official cognizance of and record the two principal events in the lives of their citizens—birth and death. Nonregistration of births has frequently resulted in the failure of a child to inherit the property to which it should have been heir, in its being placed in industrial plants under age, in its failure to obtain insurance or the right to exercise its suffrage. Nonregistration of deaths has not only a profound bearing on the general welfare of people from a sanitary point of view, but is important from a legal standpoint, frequently making unnecessary exhumations, and exhumations which in most cases are valueless as evidence on account of advanced decomposition of the deceased.

The United States Census has examined the registration of deaths in North Carolina and has satisfied itself that the registration law of North Carolina is so incompletely enforced in about twenty of the municipalities of the State that the figures of North Carolina are misleading and cannot be accepted by the United States Government. This means, of course, that the outside world will not accept the registration statistics from North Carolina when our own National Government cannot accept them.

The mayor who is not requiring a complete registration of deaths in his town or city is in this way denying a proper standing to his State among the civilized countries of the world.

Now, his Honor can enforce this law. If he thinks he can't, let him read it; and, then, if he thinks he can't, let him recall that it is being enforced for 60 per cent of the population of the United States; that its enforcement has proved to be practicable. And, in conclusion, let me assure any mayor who doubts that this law can be enforced, that the State Health Officer, although a comparative stranger in his town, can, through an examination of the newspaper files of his town or city paper, through interviews with hardware dealers who sell coffins, doctors, cemetery keepers, and preachers, easily discover unregistered deaths if the law has not been properly enforced. And if we can do it, his Honor certainly can do it.

A last word: Unless you are positively sure that your city is not one of those against which we hold the proof of unregistered deaths, which places you under a penalty of from $10 to $50 for each unregistered death, we respectfully request that you confer with your local registrar, the undertakers, the physicians of your acquaintance, and make sure that this law is enforced and that there is no danger of the grand jury hearing charges against *you* at the next term of your county court.

We issue this warning and make this request to save both yourself and us disagreeable court proceedings.

THE SIXTH COMMANDMENT AND ITS INTERPRETATION.

HENRY LOUIS SMITH, Ph.D., M.D., President Davidson College; Contributing Editor of THE BULLETIN.

Of all the history-making creeds and confessions of the religious world, probably none was compiled with such exceeding care, or has so profoundly influenced the history and development of the English-speaking races as the Standards formulated by the Westminster Assembly of Divines about 265 years ago. These Standards embodied in clear and condensed form the Puritan-Presbyterian interpretation of the Scriptures as a systematic whole, touching life and doctrine at every point.

The great Assembly spent five and a half years on its work, and held over 1,100 sittings. The immortal Shorter Catechism of this Assembly condenses the whole into a few pages, giving an epitome of the whole Calvinistic system.

The exposition of the sixth commandment therein contained employs less than two score words, yet it sweeps the whole gamut of modern sanitation, community uplift, organized cleanliness, medical care of neglected children, and preventive medicine in all its varied aspects. After the statement that the sixth commandment is, "Thou shalt not kill," follow two questions, constituting the 68th and 69th of the Catechism. The 68th, "What is required in the sixth commandment?" Answer: "The sixth commandment requireth all lawful endeavors to preserve our own life and the life of others." 69: "What is forbidden in the sixth commandment?" Answer: "The sixth commandment forbiddeth the taking away of our own life, or the life of our neighbor unjustly, *or whatsoever tendeth thereunto.*"

When we remember that this interpretation of the sixth commandment was wrought out nearly three centuries ago, before the modern science of sanitation and preventive medicine was heard of, we are astonished at its perspicacity, its breadth, and its up-to-dateness. We stand amazed that the Church has thundered against the violent taking away of human life, yet has so rarely recognized that the divine obligation imposed by the commandment extends to the conserving of human life by warding off all preventable diseases, and that the divine imperative forbids all practices, modes of living, and methods of conducting business, that needlessly endanger the health of those thus employed.

To the philosophic mind, our bondage to the gross, the palpable, and the spectacular is almost inconceivable. When a fair-haired little girl is ruthlessly murdered with an axe or a bludgeon, the whole Nation grows hysterical in a frenzy of indignation; yet, perhaps, on that very day families are moving all their earthly belongings into tenement houses made vacant by tuberculosis, and our communities watch the procession to the graveyard begin again without a word of protest.

When a tenement house catches fire, and in spite of the valor of the firemen and the sympathy of thousands of spectators, some of its inmates perish in the flames for lack of fire-escapes, the whole land grows righteously indignant, and the owner of the building is probably prosecuted for murder. Yet the general public allows the filth and unsanitary condition of such a building to doom a large percentage of its inmates to death every year without a lawsuit or a word of protest.

If a dweller in one of our cities kept a ferocious wolf on his premises, and his captive, through the carelessness of its owner, should escape and tear a citizen to pieces on the public highway, the whole city would be in a white heat of righteous indignation. It endures, however, without realization or protest, the breeding of flies and mosquitoes in countless millions on premises whose owner can easily abolish such breeding places if he desires, but is too lazy or careless or avaricious to do so. Yet it is undoubtedly true that these insects destroy the lives of more people in any one State, in one year, than all the wild beasts and mad dogs of the United States have destroyed since the settlement of our country.

Our greatest Teacher, twice himself, taught us how to interpret and apply these marvelous ten Words of the Law. Following His example, we must believe that the prevention of diseases is as clearly enjoined by the sixth commandment as the prevention of actual murder, and thus every such effort has a religious sanction and is a religious duty. Ministers, therefore, can and should preach on the whole meaning of the sixth commandment, as on the whole meaning of the other nine, enjoining the care of our lives and the lives of others as a religious duty.

THE MODERN APPLICATION OF THE PARABLE OF THE GOOD SAMARITAN.

W. P. Few, Ph.D., President of Trinity College; Contributing Editor of The Bulletin.

I do not know that a text could be found better suited for a sermon on Sanitary Sunday than the parable of the Good Samaritan, enforcing as it does so powerfully and beautifully the human duty of neighborliness and care for the sick.

Modern civilization rises or falls just in proportion as it embodies in itself the principles included in what the New Testament calls the Kingdom of God, that is, that reign of ultimate truth which Jesus Christ came to set up in the lives and characters of men.

While this truth may be called ultimate in its finality, it is not given to us in the shape of a formulated philosophy of life. It is germinal in its character. It is to be interpreted and applied to all phases of our life and conduct. This parable, for example, has nothing to say specifically about preventive medicine, sanitation, or hospitals; still it holds in solution the whole doctrine of care for the sick and needy. The ideas we are left to work out for ourselves; that is the field of modern science and that has been a chief discipline of the race. But it does lay upon us the Christian duty of using the best wisdom of this generation and of all generations not ony in tending the sick, but especially in making the conditions of life wholesome and uplifting, and so preventing sickness.

If it is a duty to help the sick, it is an even higher duty to prevent sickness so far as that lies within the power of a well-ordered civilization. If we rely on Providence to take care of us when we ourselves do not use all the means within our reach, we are merely sinning against the light.

Ideas, as opposed to germinal truth, are the outgrowth of advancing civilization, and new ideas are constantly needed when changed conditions arise. Hence the necessity for constant progress, else there must be sure decay. The crowded conditions of modern life in cities and densely populated districts make necessary new methods for preventing the spread of disease; otherwise the health and welfare of the whole people are placed in jeopardy. So comes about the duty for communities and States not merely to care for the sick individual, but to create conditions that will make for the health and happiness of the whole people. And this, I think, is doing nothing more than giving a wide application to the parable of the Good Samaritan.

To lay properly the physical foundations of life is a stupendous task to which the race had scarcely begun to set itself. The marvelous achievements in material progress and widespread physical well-being within the past fifty years have made it possible for large numbers to live comfortably and even sumptuously with the body. The attainments of the recent past are, no doubt, but a faint foreshadowing of what is to follow in the long and upward march of the human race. And in all the efforts of religion and education and civilization to keep and transmit the precious heritage of humanity, one of their first tasks is this conservation, strengthening, and sweetening of human life itself.

"He hath anointed me to preach the gospel to the poor; he hath sent me to heal the broken-hearted; to preach deliverance to the captives, and recovering of sight to the blind; to set at liberty them that are bruised." In these words from the ancient prophet, Jesus Christ at the outset of His earthly career announced His mission to free and expand all the powers and all the capacities of our human nature. It is a prophecy of a completely redeemed humanity, and the splendid vision will become a reality when the bodies, the minds, and the characters of men are cared for as they should be, on a vast and universal scale.

PUBLIC HEALTH PROGRAM FOR PREACHERS.

William Louis Poteat, LL.D., President Wake Forest College; Contributing Editor of The Bulletin.

The preachers of North Carolina are so intelligent a body of men and are so alert in their consecrated service to the community that it would seem almost an impertinence to make suggestions to them about their opportunities respecting the public health. I venture, however, upon the request of the Secretary of the Board of Health, to offer for their consideration the following program of activities:

I. Form and inform the local public opinion by at least one sermon on public health. Texts: "He went about doing good." Acts x:38. "All they that had any sick with divers diseases brought them unto him; and he laid his hands on every one of them and healed them." Luke iv:40.

Two leading ideas:

1. The distinctively practical aim of Jesus' teaching and work.
2. The large part of His public ministry devoted to curing the sick.

II. Help in finding practical expression of the informed public opinion on public health:

1. Coöperate with local physicians. Attend meetings of the county medical society.
2. Distribute, with the same motive and fidelity as in the case of religious tracts, the bulletins and other publications of the State Board of Health.
3. Organize clean-up leagues and sanitary clubs, enlisting the interest of the women of the community.

WASTE.*

†By Cyrus Thompson, M.D., Jacksonville, N. C.

If the art of living is the finest of all the fine arts—and who that dreams of a perfect life shall doubt it?—then the saddest thing in life is man's slowness in learning to live it. The world is so beautiful, so beneficent, so abundant. The order of nature is so frugal and so con-

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*Annual oration delivered before the Seaboard Medical Association of Virginia and North Carolina, at Newport News, Va., December 5, 1911, and first published in *The Virginia Medical Semi-Monthly*.

†Dr. Thompson is a Contributing Editor of The Bulletin.

servative. In the stars of the firmament, there is no lost motion; no planet swerves from its helpful path; there is no dissipation of energy but is conserved in some useful form. If human economy is negligent, destructive, and wasteful, the divine order is constructive and saving. Out of the void and darkness, the spirit of God created all that is, preserves it all, and destroys nothing. Out of the abundance of man's heritage, over which he holds rightful dominion, behold the waste of life, the waste of opportunity, the stupendous waste of material!

Just one old Book contains the wisdom of the ages—written by the best of their times about the best when at their best. As a scheme of life the world's literature has nothing comparable to it. It makes record of the one perfect life, the one universal man, the measure of all men. In Palestine one afternoon, this Galilean had been teaching a vast multitude. "When the day began to wear away, then came the twelve and said unto him, 'Send the multitude away, that they may go into the towns and country round about, and lodge and get victuals; for we are in a desert place.' But he said unto them, 'Give ye them to eat.' And they said, 'We have no more but five loaves and two fishes, except we should go and buy meat for all this people.' For they were about five thousand men. And he said to his disciples, 'Make them sit down.' Then he took the five loaves and two fishes, and looking up to heaven he blessed and brake and gave to the disciples to set before the multitude. And they did eat and were all filled." "When they were filled"—with food and no less with wonder—when the multitude and the disciples of the Master were satisfied and ready to go away, then came to his disciples this command out of the carefulnesss of God, "Gather up the fragments that remain, that nothing be lost." A desert place, to be sure—a multitude to be fed, only five loaves and two fishes; but the Lord of Life, the master of the feast, the divine economy of saving, and the fragments more than they had at the beginning!

With the savage man, all is waste; as civilization advances, something is saved, though much is lost.

In a material way, we are saving much. The cotton of the South not long ago was valuable only for the lint, but now a very considerable part of the value of the crop is contained in the seed. Thirty years ago, a seedless lint seemed desirable; to-day the cotton-grower would almost welcome a lintless seed. Olives do not grow in the cotton belt, nor cows and hogs on cotton stalks; but from cotton seed we get lard made in Chicago, butter churned in Indiana, and olive oil pressed in sunny Italy. Petroleum gives us everything from axle-grease for an ox-cart to gasoline for an aeroplane; and the profits of the Standard Oil Company are largely made from the waste of twenty-five years ago. Armour has learned the saving principle of the whole hog or none; and he puts on the market everything from the ham to the internal secretion of the suprarenal gland. It used to be a problem with our sawmills what to do with the sawdust. Invention found a way to throw it into the furnace for fuel, and later invention converts it into wood alcohol. On farm and in factory, improved implements, methods, and machinery make impossible and ridiculous the slow and wasteful methods of other days. Vast areas of waste lands we are reclaiming by drainage, and by irrigation we are forcing the desert places to blossom like the rose. The stagecoach is a memory, and railroads are everywhere; and the wastefulness of bad country roads is preached at every turn by the makers of automobiles and gasoline. The waste power of turbulent waters is converted into productive energy. Steam and electricity, the telegraph and telephone, are crowding the world together and wiping out time and distance; and still, finding it too far withal to steam around Cape Horn, we are spending our millions to save time, and cut across at Panama.

And in a social way, we are becoming conscious of our wastefulness, and are turning our minds to the principles that underlie conservation. I believe that I am right when I say that all social waste is due to the assertion of individual rights, and all social conservation is founded upon a denial of them. And I believe that the best government for any man is that which is best suited to develop the best possibilities that are in him. The form of government, in other words, must be determined by the matter of development.

All government is a denial of natural rights and the substitution of duties for the good of the individual in the common good. The fullest exercise of natural rights is found in a state of savagery; the highest conservation of rights is found in a state of civilization—in that civilization which makes fullest denial of natural rights for the well-being of society.

The State exists for the individual, and the individual must exist and be fitted to exist for the State. No personal right can stand in the way of the individual and social good. The doctrine of rights must yield to the doctrine of duty; in the higher civilization, the sense of selfishness must give place to the sense of service.

The law of eminent domain holds true not only in lands and material things; it is operative as well over men. The State may tax for the preservation of order and compel for the public service. It may fine and imprison for crime; for the safety of society, it may take away all rights for a time or a lifetime; nay, it may take even life itself when the individual so misuses his rights that his death, better than his life, subserves the public good.

Preventive medicine, than which there is no finer fruit of civilization, is founded upon a denial of rights. Compulsory vaccination is primarily for the safety of the individual, but mainly for public protection. Quarantine against acute contagious and communicable diseases is prevention of waste through denial of personal rights. We may not allow a man to exercise a right when he exercises it to his own hurt and to the injury of his neighbors. The right is taken from him for his own and the public good, so to conserve best his best rights in the health of his community.

These principles we are steadily educating men to appreciate, and when we come to the full appreciation of the divine economy of service and saving, pestilence will not walk in darkness, nor destruction waste at noonday.

A dairyman's cows are his own, to be sure; but he may not sell infected milk to waste the health and life of his neighbors' children.

A butcher's meat is his own; but, if unfit for human food, he may not offer it in the market-places.

A patent nostrum is its maker's own; but let him warn the purchaser of its narcotic content.

A manufacturer's money is his own; but he may not spend it for the cheaper labor of the undeveloped child, or require of a man for a day's labor toil beyond a definite number of hours.

A man's child is his own; but he may not waste its growth and health and life in hazardous labors.

A man may not waste his own child nor his neighbor's child, nor claim any right of person or property that hinders the aggregate development and safety of his community.

On every hand out of the mouths of frauds, ignorance, and politicians, we hear enough of the rights of men; let us hear more rather of their duties. We have had enough of waste; it is time we had more of conservation. To love our neighbor as ourself is but to see ourself in our neighbor and to find our safety everlastingly involved in his welfare. From rights, then, to duties; so leads the way from waste to permanent wealth and happiness.

Think for a moment of the stupendous waste in an uneducated and untrained child, the countless untrained, undeveloped, uneducated children of the past. You desire wealth, but intrinsic value resides only in man; the value of things is derived from man; and the greater or less value of things is dependent upon the character, the quality of man. A lively consciousness of this fact is the motive of all progress in education.

Our system of public education is founded upon a denial of rights and a material consciousness of duties—a denial of the right of the child to himself, of the right of the parent to his child, of the right of even the childless man to so much of his money as may be necessary for the child's education. To conserve, to construct, this is the mark and work of civilization; to tear down, to hinder, let that be of the past: it is diabolical. To build, to prevent waste, this embodies the whole duty of civilized man. The State is endeavoring to build for the sake of the individual and itself, and the individual must not be permitted to hinder or destroy, not even for himself. The State is fulfilling its duty to the individual, and the individual must be fitted to fulfil his duty to the State.

To prevent waste, therefore, we have everywhere our common schools, our graded schools, our colleges and universities; our technical schools for the education of men and our normals for the training of women. For the same reason we shall come everywhere to a system of compulsory education. Recognizing already the defects and consequent waste of our methods, we are coming even now to the study of exceptional and nervous children and to the medical inspection of school children in general.

To prevent waste, the State, the churches, and fraternal orders establish and maintain orphanages. These are not mere charities, not matters of sentiment only; they are makers of men and women—they make them, alas! far better than the average home!

To prevent waste, we teach the deaf and dumb and the blind, and make them self-sustaining members of society.

To prevent waste, we care for the insane and the epileptic, and restore many of these unfortunates to happy and useful life.

To prevent waste, gathering up hitherto neglected fragments, the State of North Carolina leads among Southern States in the establishment of a school for the teaching of the feeble-minded. The motive originated in this society, and stands as one of its glories forever. The

Commonwealth of Virginia is urged to follow in this constructive work; and Virginia cannot lag behind.

To prevent waste, everywhere there is better care of the criminal classes. The old misanthropy did not seek to reform and save; the old misanthropy imprisoned in noisome jails without hope of health or reformation, at the offender's cost and wretchedness. No prouder name stands in English history than the name of John Howard, the humane country gentleman, high sheriff of Bedfordshire, the father of modern prison reform. Begun in sentiments of humanity, the new philanthropy leads the State to take account of the offender and forces the offender to take account of the State. We punish the criminal not for the sole purpose of punishing, but for the protection and progress of society, to deter others from the commission of crime and to reform or improve the offender and send him home a useful member of society. If we deprive him of liberty and his rights, it is to make of him a better citizen. We work him and care for him; we feed him, clothe and shelter him; we make him profitable to himself and useful to the State even against his will.

To prevent waste, we have juvenile courts that consider the defects and possibilities of the criminal; and we build reformatories for young criminals, lest the hope of reformation to useful life be lost by association with the irretrievably bad.

To prevent waste, the physician has ceased to be the mere giver of drugs to them that are sick; he is become the peripatetic teacher of sanitation and hygiene, the guardian of individual and public, the apostle of the gospel of health. Having fought against death at close quarters and failed, he warns all men everywhere to fortify against his approach. And so he adds to the years of human life. If he carries no more of us beyond the limit of three score years and ten, he leads more lives more nearly to this limit. Oh! the waste of life in its prime, the slaughter of the innocents from mothers' arms, the untimely tears of broken hearts, before the physician glimpsed the fulness of his mission and began to rouse the State to the duty of preventive medicine! You've seen the tumorous scars, in every city, hamlet, and churchyard, that made prematurely leprous the beautiful face of mother earth.

Not that our work is yet fully comprehended or perfected; but this one thing we do, forgetting the things that are behind, we press forward, proud that on stepping-stones of our dead selves we are rising with better conscience to higher things.

To prevent waste, the manufacturer begins to look after the sanitation of premises and the health of his operatives. He finds that he can save life and time and money.

To prevent waste, great insurance corporations are organizing health departments, issuing health bulletins, and teaching their policyholders and the public how to live.

And to prevent the waste of war, this relic of barbarism, this verity of hell—the dream of poet and seer through centuries from Isaiah to the latest soul that sang in sight of things—to beat our swords into ploughshares and our spears into pruning-hooks—the greater nations of the earth now seek to adjust their disputes by arbitration. May our young Nation lead the world in this joyous laugh in the face of Death! Oh, it will come some time, and nations will learn war no more! Did you ask when? I know not the day; but when man is wise enough to exercise his duty to his fellow as he would now assert his rights in his face, we shall not be far from the

"One far-off divine event,
Toward which the whole creation moves."

For the world, despite all its evil and waste, is growing better; but from wild grapes to grapes is a long way, a slow and halting evolution.

But there is more of high ideal and noble purpose in the world than ever before; knowledge is being diffused as never before, and we are growing more humane. But if we are on the Appian way, in sight of the Three Taverns, let us thank God, take courage, and go on: we are not yet in Rome.

For with all our diffusion of knowledge and increase of humane sentiment, with all that we write on our ledger as profit, is there not somewhat that we must set down as loss? "Reaching out for more things that are good, are we holding fast to the best things that we had?" The fear of hell may be the hangman's whip to hold the wretch in order; but the fear of hell, the fear of punishment, is a necessary adjunct of government. The soul that sinneth, it shall die: let that law stand! For the wretch, the wrong, the wrong in moral fiber, punishment must be swift and sure. But on every hand, crime goes unpunished and murder is unavenged; mobs lynch and set the law at naught. In one turbulent Commonwealth, even the Governor, the Chief Executive and embodiment of law, condoned a lynching and expressed his willingness to have resigned his office and led the mob in his own State.

We are losing the fear of punishment both here and hereafter. In some serious sense, society is letting the sentiment of humanity run prematurely to seed. Our sympathy with the criminal living makes us forgetful of the murdered dead; juries listen to sham pleas of insanity, and courts seriously ponder over the violence of brainstorms. We are too humane to convict on circumstantial evidence, the only evidence without possible motive to lie. To withhold lawful punishment from this brood is to expose the innocent and endanger society; to punish with certainty is to protect society, lessen insanity and cool the heads of the violent.

To be commended are the courts of Virginia: Beattie said at last that circumstances had not lied on him; and McCue's insanity did not lessen his crime or the consequence of it.

So with all our increase of knowledge and growth of humane sentiment, our utilization of natural resources and prevention of material waste, our marvelous National progress, the thoughtful man cannot fail to inquire if we are building character, making men and women, as well as we builded in former days. After all, are we not tithing mint and anise and cummin and forgetting the weightier matters of the law? Are we as law-abiding as we used to be; have we the old-time reverence for sacred things; do we reverence God and the State as our conscience, and our conscience as the State and God? By the assertion of rights, are we not following the way of the prodigal who spent his substance in riotous living and would fain, at last, have filled his belly with the husks which the swine did eat?

If my son have not respect for my authority and the authority of the State; if he reverence not God and holy things; if he have not faith and hope and love abiding in him; if he have not respect for the rights of others and respect for himself; if he have not character; no wealth or knowledge of his can tell me that he is not a dangerous derelict without anchor, and I shall know that he is the heaviness of his father.

I am not preaching you a sermon—I am not cut out for that—but whatever of good there is in me comes, I know, from that mature sentiment which, when the Sabbath dawns for man's rest, says "Come, let us go up unto the house of the Lord"; and, when I have entered, "The Lord is in his holy temple; let all the earth keep silence before him!"

Rights and not duties, selfishness and not service—that all men are created free and equal, that every man is born an uncrowned king—here is our leakage; and we go to wreck upon the rock that all just powers of government are derived from the consent of the governed. It is not true. Our wilder western commonwealths are eating and offering us the toothsome apple of the initiative, the referendum and the recall, even of judges. For authority, law, order, under which alone abiding progress is possible, they would substitute the shifting whim of the multitude; for obedience and stability they offer us emotion; for progress, the mere turbulence of change. In the midst of it all, one feels like crying out—

"Ah, God, for a man with heart, head, hand,
Like some of the simple great ones gone
Forever and ever by;
One still strong man in a blatant land,
Whatever they call him—what care I?
Aristocrat, democrat, autocrat—one
Who can rule and dare not lie!"

That all governments derive their just powers from the consent of the governed—it is not true. But this is true, that even a king must be a king, not for himself, but for his subjects. Until your uncrowned kings are developed to comprehend this in themselves, the just power of government, even for the sake of the development and safety of your uncrowned king himself, is founded in the duty which the greater man owes to the less. We governed Cuba till she was capable of self-government. We shall govern the Philippines till they are capable of self-government; it is our duty to them, and we do not ask their consent. We govern and care for the disfranchised negro in the South; the wiser of their race know that it is best. It is a matter of duty, not a question of consent.

One thing more. Whether there be startling political fads and graft in places low and high; maudlin sentiment for the criminal and slack enforcement of law; if we grow pessimistic and deplore the decadence of morals on every hand; if the moral stand aghast at the abundant grist of divorce mills; know that these things originate in one common source, the most appalling source of social waste, the increasing laxity of family government. This is the one most baleful instance of assertion of rights and negation of duties.

It used to be said that the parent controlled the child; it is now a common saying that the child controls the parent. That the parent does not control the child is too grievously true. Parental authority in no sense depends upon the consent of the governed. It is inherent in parenthood; it is a duty which the parent has no right to disregard, whether for himself, for his child, or the State. For the family is the indispensable social unit. The purpose of the family is the training of children to orderly life and citizenship. More and more the family is failing of its purpose. I must train my child in the way he should go for the child's sake and for society's sake. It is not a work which I have a right to do or not to do: it is my inalienable duty to him, to the State, and to God. I may not relinquish my work any more than the Creator of all things may abdicate His throne upon the circle of the heavens. So only can come among men the doing of justice and judgment. The Puritan may have been unduly austere, but the Puritan made men and women. To spare the rod even and so spoil the child, what is it but to take out of my child the best that is in him along with all his best possibilities? I, his king, will have robbed my subject and wasted the substance of the State.

Patriot and demagogue rant about rights of local self-government—let them descant less upon the beauties of it to the thoughtless, unbridled multitude; but rather, as fathers, let them teach it to their children—teach them obedience to divinely constituted authority and obedience to self. For "he that ruleth his spirit is better than he that taketh a city." So may crime be lessened and more surely punished; so may juries look up to God and care well for the State; these new mad-storms of reckless brains be lulled ere they rise; the company of the insane will grow smaller, and the number of hysteric women and psychasthenic men will grow less.

In the building of character, the right attitude of the soul of man, a work of early years, nothing can take the place of the family. The schools are only supplementary. And I pray you, O schoolmaster, teach my child both obedience and books if you can; but if you can teach him no books, teach him obedience to you and control of himself—teach him this form of local self-government, this most vital, embryonic form of democracy.

It is said that "when the court chaplain of Frederick the Great was asked by that gruff monarch for a concise summary of the argument in support of the truths of Scripture, he instantly replied, with a force to which nothing could be added: 'The Jews, your Majesty, the Jews!' "—a people enduring, law-abiding, not much given to crime.

"And the Lord said, Shall I withhold from Abraham that thing which I do, seeing that Abraham shall surely become a great and mighty nation, and all the nations of the earth shall be blessed in him? For I know him, that he will command his children and his household after him, and they shall keep the ways of the Lord, to do justice and judgment, that the Lord may bring upon Abraham that thing which he hath spoken of him." It would come in no other way; not even the Lord could bring it any other way!

Therefore, whoso shall rouse the heads of American families to resume their divinely rightful sway, to discharge to their children, the State, and to God their inalienable duty, he shall preserve our rights and prevent the waste of the Nation.

*FULL TEXT OF OPINION IN THE McCULLERS CASE.

In view of the fact that the opinion of the Supreme Court in the matter of Dr. J. J. L. McCullers v. Wake County Commissioners affects the entire State, *The Times* is printing the opinion in full to-day:

No. 217—Wake.

In the Supreme Court of North Carolina,

February Term, 1912.

J. J. L. McCULLERS, APPELLANT, v. THE BOARD OF COMMISSIONERS OF WAKE COUNTY, N. C.

This is a proceeding for mandamus to compel the defendant board to admit plaintiff to the office of superintendent of health of Wake County, and to compel the said board to audit his accounts for services.

The cause was heard by his Honor, Judge Peebles, in the Superior Court of Wake County on December 1, 1911, and judgment rendered denying the relief prayed and dismissing the proceedings.

From the said judgment plaintiff appealed.

Aycock & Winston and Bart M. Gatling for plaintiff.
B. C. Beckwith and R. N. Simms for defendant.

Brown, J. The plaintiff derives his title to the office of superintendent of health of Wake County by appointment of the secretary of the State Board of Health, under chapter 62, sec. 9, Public Laws of 1911, which provides that if the county board of health of any county shall fail to elect a county superintendent of health within two calendar months of the time fixed by the statute when such election shall take place, the said secretary of the State board shall appoint.

The defendant board of commissioners passed a resolution undertaking to appoint a superintendent of health and to fix his salary. In consequence of such conflict between the two boards and the failure to fix his compensation, the plaintiff appeared before the board of health at its next meeting and declined to qualify as superintendent of health for Wake County. The board of health having failed to elect a superintendent for more than two calendar months, the secretary of the State board, W. S. Rankin, on July 17, 1911, appointed plaintiff the superintendent of health and quarantine officer for Wake County, and fixed his fees and compensation, claiming to have done so in accordance with sections 9 and 16 of said act. The plaintiff qualified as such and the defendant board declined to recognize him and to pass on, audit and approve his bills for fees as required by section 9. His Honor found the facts as stated in sections 1 to 8, inclusive, of the complaint to be true, but it is unnecessary to state them more fully.

1. It is contended that the contingency had not arisen when the secretary could lawfully appoint. The statute requires the board of health to meet and elect on the second Monday in May, 1911, and thereafter on the second Monday of January in the odd years of the calendar. A majority of the board of health voted for plaintiff, but he refused to qualify. It was the duty of said board to at once elect another person. This it failed to do, so that the office remained vacant for more than two months up to the time the State secretary made the appointment. We think the true intent and meaning of the statute is to give such appointment to the State secretary when the board of health for any reason permits the office to remain vacant for two calendar months from the date fixed by the statute, in this case the second Monday in May.

The public interest requires that this particular office shall have an incumbent to discharge its duties, and the evident intention of the General Assembly was to prevent the office being unfilled for a longer period than the time named. We think the learned counsel for the defendants place a too restricted con-

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**Raleigh Evening Times*, February 22, 1912.

struction upon the meaning and purport of the words, "shall fail to elect," as used in the statute. We think the General Assembly meant the choosing and induction into office of a superintendent of health within the two calendar months. State v. Wilroy, 10 Ire., 329. If this were not so, then a hostile board of health could keep the office vacant by electing a person who would not qualify, and the purpose of the General Assembly be entirely defeated.

2. But the real controversy in this case, which has been argued with much force by counsel on both sides, is the constitutionality of section 9 of the act.

The power of the secretary of the State board to make the appointment is conferred by said section, and if it is void *in toto*, then it is contended that plaintiff's title to the office fails. The learned judge of the Superior Court took this view and in his judgment expressed it in these words:

"Article 14, sec. 7, of State Constitution, forbids the holding of two offices by one man at the same time. If the act had provided that D. T. Johnson, James I. Johnson, and Z. V. Judd should constitute the board of health for Wake County, their acceptance of said office would have rendered vacant the office of chairman of the board of county commissioners, office of mayor of Raleigh, and office of superintendent of public schools for Wake County. The General Assembly seems to have linked the office of superintendent of the board of health for Wake County with the other three offices and made them inseparable, and for that reason, I think and hold that section 9 of Public Laws of 1911, chapter 62, is unconstitutional and void."

It appears that the persons named above are respectively chairman of the board of commissioners of Wake County, mayor of Raleigh, and county superintendent of schools for Wake County. Chapter 62, Laws of 1911, appears to be a comprehensive revisal of all preceding laws. It covers the entire subject of public health, both State and county. It first provides for the establishment of a North Carolina Board of Health, which is to be made up by the election by the Medical Society of North Carolina of four members, and by appointment of the Governor of five. Section 9 constitutes the county board of health of the chairman of the board of commissioners, the mayor of the county town, and when there is no mayor, the clerk of the Superior Court, the county superintendent of schools, together with two physicians to be elected by those three public officials.

We are unable to concur in the conclusion that the statute is violative of Article XIV, sec. 7, of our State Constitution. It is not a case where one person holds two offices at the same time, but rather the case where the duties of a member of the county board of health are to be performed *ex officio* by the chairman of the board of commissioners, the mayor, and the superintendent of schools. These duties cannot be discharged by the individuals named in his Honor's judgment any longer than during the period they hold the offices of chairman, mayor and superintendent. The right to discharge such duties is not conferred upon them as individuals, but is a part of the duties of the one office already held by each.

The case of Barnhill v. Thompson, 122 N. C., 493, does not sustain the contention of the defendants. The facts in that case show that the board of education of Bladen County was elected by the board of commissioners of said county, the clerk of the Superior Court and the register of deeds, under the existing law, sitting with them. This body elected the defendant Thompson, who was a member of the board of county commissioners, a member of the board of education, and he undertook to exercise the duties of both offices. This Court held that he was ineligible to discharge the duties of county commissioner; that when he accepted the second office he thereby vacated the one he already held. His right to act as a member of the board of education was not questioned. In the case at bar the persons named in the judgment have not been elected or appointed to any other office, but the added duties of the county board of health have been placed upon the offices they already held, and as long as they retain such offices they must discharge such duties, and when they vacate such offices their successors must continue to perform them. By discharging the duties of the board of health and acting as members of that board those gentlemen did not vacate their offices they already held, for the moment they resigned or vacated such offices they at once became ineligible to continue as members of the board of health. For this reason they could have no right to elect which office they would take—the offices they held or membership on the board of health. This legislation is not novel in North Carolina—nor, indeed, in the other States of the Union. In 1901 the Legislature passed a similar act, section 4444 of the Revisal. That act provides that two physicians shall be elected—one by the chairman of the board of county commissioners, and one by the mayor of the county town, who, together with the board of commissioners, shall constitute the county sanitary committee, of which committee the chairman of the board of county commissioners shall be *ex officio* chairman.

We also have the familiar case of the Governor, who is made by law a trustee of the University of the State and chairman of the board, and is required to perform these duties and also act as chairman of the executive committee of the trustees. Similar legislation is to be found in other States having a constitutional provision similar to ours. In West Virginia the law requires the Governor, Auditor, Treasurer, Superintendent of Schools, and Attorney-General to serve on the board of public work, and prescibes the duties of said board. The Court of Appeals, in an elaborate opinion, held the act valid, saying, in substance, it simply prescribes additional powers and duties to be performed by officers already elected by the people, and that it does not amount to an appointment to an office created by law, but that it only amounts to requiring the officers of the executive department elected by the people, to act as members of the board of public works; that it in substance simply annexes additional powers and duties to their respective offices. The Court goes on to say "that it is a time-honored usage in Virginia, and continued in West Virginia, to cause certain duties which might have been assigned to officers specially appointed or elected for the purpose, to be performed by officers already appointed for general service." Bridges v. Shallcross, 6 W. Va., 578, citing Wales v. Belcher, 20 Mass., 508. The question is considered by the Court of Appeals of Virginia in Sharpe v. Robertson, 5 Gratt., 518. In that case certain duties were assigned the circuit judges to be performed in the Court of Appeals and special compensation fixed by the General Assembly. Judge Baldwin, speaking for the Court, says:

"But the act in question creates no new judicial offices and appoints no additional judges, but merely attaches new duties for offices existing to be performed by the incumbents, within the constitutional power of the Legislature."

The subject is discussed by the Supreme Court of Texas in Powell v. Wilson, 16 Tex., p. 59, and the views we have expressed herein are fully supported. The Court says: "It cannot be doubted that it is competent for the Legislature to create an office, which shall be that of a substitute, or mere auxiliary to another, the duties of which shall commence and consist in performing the duties of the principal office." The subject is elaborately discussed by the Supreme Court of Florida in Wilkins v. Conners, 27 Fla., 329, and it is held that the statute making it the duty of the Sheriff of Escambia County to act as city marshal of Pensacola is not obnoxious to the Constitution of that State, declaring that "No person shall hold or perform the functions of more than one office under the government of this State at the same time." In Louisiana the same view is taken in State v. Somnie, 33 La. Ann., 237, where it is held that the act providing that the clerk of the district court shall be *ex officio* member of the jury commission does not confer an additional office upon the incumbent of the clerk's office in violation of the constitutional restriction.

We could multiply authorities in support of these views, but deem it unnecessary.

It is true, as contended, that section 9 uses this expression, "The term of office of members of the county board of health shall terminate on the first Monday in January in the odd years of the calendar, and while on duty shall receive $4 *per diem*, to be paid by the county." The former law declared their term of office to be coterminus with that of the commissioners with whom they serve, and when on duty they shall receive the same compensation as is received by county commissioners. Evidently the language of the new act in reference to term of office applies only to the two physicians who are chosen as members of the county board of health by the chairman of the board of county commissioners, by the mayor, and by the superintendent of schools.

The change in the verbiage is due to the fact that there is a difference in the terms of the *ex officio members* of the county board of health. The county superintendent of schools goes out of office on the first Monday in July of each year; the mayor of the county town, as a rule, goes out in May or June, while the terms of the county commissioners expire in December. It evidently was not intended to either leave a vacancy in the health board or to shorten or lengthen the terms of the *ex officio* members. The person holding the office of county commissioner when his successor is elected as chairman of the board of county commissioners on the first Monday in December would go off the county board of health and the succeeding chairman of the board of county commissioners would *eo instanti* become a member of the county board of health. The same is true of the mayor and of the superintendent of public schools.

Our conclusion being that the entire section of the act is a valid exercise of legislative power, it is unnecessary to discuss the powers of the health board as a *de facto* organization with a colorable right to discharge the duties imposed upon it.

3. It is contended that the secretary of the State board did not fix the fees as required by the act. We fail to see how this affects the plaintiff's title to the office. It is plain that the secretary undertook to fix the fees to which plaintiff would be entitled, but whether he observed the standard laid down by the statute is not for us to determine in this proceeding. The statute, section 9, declares that the compensation of the superintendent of health for the county, when fixed by said secretary, shall be "in proportion to the salaries paid by other counties for the same service, having in view the amount of taxes collected by said county."

And the same section declares that "all expenditures shall be approved by the board of county commissioners before being paid."

It thus becomes the duty of the board of commissioners to pass on and audit the plaintiff's accounts for services and to determine whether they are within the bounds fixed by the statute. The approval of the defendant board is necessary to the payment of plaintiff's account, and while the court will not undertake to compel the county commissioners to approve them, it will require them to consider the account and to pass on it in good faith in the exercise of a sound judgment as to whether or not the services as charged are warranted by the statute.

4. It is contended that mandamus is not the proper remedy, but that *quo warranto* is. This contention is based upon the theory that one Dr. Stevens is in possession of the office of "county superintendent of health" for Wake County and exercising its functions. We find nothing in the record that gives Dr. Stevens even a colorable title to the office or indicates that he is in possession of it. The resolution of the county commissioners does not purport to elect him superintendent of health or even to induct him into any office established by law. If he is in the service of the county commissioners under their resolution, a "county physician" (the term used in the resolution), then he is merely a contract physician performing services which should be performed by the plaintiff, and is not exercising the functions of a public office. He has not even a colorable title to the office of "county superintendent of health." He is not a party to this proceeding and was very properly omitted.

That mandamus is a proper remedy to enforce plaintiff's demands is established by abundant authority. Moore v. Jones, 76 N. C., 185; Doyle v. Raleigh, 89 N. C., 133; Lyon v. Commissioners, 120 N. C., 239; Koonce v. Commissioners, 106 N. C., 192.

We assume that when this opinion is handed down it will be unnecessary for plaintiff to sue out the writ; but in case it is, the plaintiff may apply for a peremptory writ of mandamus to the judge of the Superior Court residing in or holding the courts of the Sixth Judicial District.

The costs of this appeal will be paid by defendant board of commissioners.

Reversed.

*McCULLERS CASE NOT ENDED.

County Attorney Beckwith Says Board Will Recognize Dr. McCullers, But Appeals to the People for Final Judgment.

To the Editor of the Times: The board of commissioners for the county of Wake is not resentful to criticism. It recognizes the prerogative of the press to impeach and the right of the people to condemn any official act of a public servant.

The Times having often exercised its high prerogative by impeaching with vigor, though the people have not yet condemned, the board of commissioners for presuming to defend the supposed constitutional right of the people to local self-government, and the right through their chosen commissioners "to exercise a general supervision and control of the penal and charitable institutions and finances of the county," will not, I presume, close its columns to this communication. I ask nothing but an open field.

No doubt, the board of commissioners itself will not stand mute, whenever called upon by the people who elected them, to answer concerning its action in questioning the legal right of a secretary of the State Board of Health to foist upon a county an officer and fix his compensation without the approval of the board of commissioners whose constitutional and legal duty, it had been thought, was to have general supervision and control of the affairs, especially the financial affairs, of the county. And I, as citizen and as attorney, shall not be silent whenever the inherent, fundamental right of the people to local self-government is challenged by any, on any pretext, or is taken away by act of Assembly under the specious guise of protecting the public health.

But I shall not at this time trespass upon your space with long lists of facts and figures, or fatigue your patience by a long string of reasons for the board's action in defending the McCullers case, but shall be as brief and pointed as possible. Enough to say, they held it to be their sworn duty.

On the second Monday in May, 1911, the county board of health (a new creation by the last Legislature), composed of the mayor of the county town, the county superintendent of schools, the chairman of the board of county commissioners, and two physicians chosen by them, met and elected Dr. J. J. L. McCullers to the position of county superintendent of health, a new office created by chapter 62, Public Laws 1911.

At the regular monthly meeting of the board of county commissioners, June 7, 1911, the members of the county board of health, together with a number of individual citizens, appeared before the board of commissioners and requested approval by the board of a proposed salary of twenty-five hundred dollars ($2,500) a year to be paid Dr. McCullers as county superintendent of health, out of the general county fund.

Having listened to arguments by the visitors and having given the matter due consideration, the county commissioners did not feel justified in approving of $2,500 to be paid out of the county treasury to a superintendent of health, as the board knew that the proposed salary was greatly in excess of that for which identical service could be obtained; so the board passed a resolution directing the payment, out of the general fund

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**Raleigh Evening Times*, February 29, 1912.

of the county, of the sum of six hundred dollars ($600) a year as compensation or salary to the county superintendent of health, providing he discharged certain duties therein specified, and deducting so much from said salary for his negligently failing to perform the same.

Although Dr. McCullers had been an active candidate for reëlection to the office of county superintendent of health or county physician at a salary of $50 a month (the salary he had received during former terms in that office) prior to the passage of said chapter 62, yet after the passage, on March 7, 1911, of that act (which seemed to open wide the doors of the county treasury) and after the board of county commissioners had withheld its approval of the $2,500 salary proposition, submitted by the county board of health, Dr. McCullers refused to qualify by not taking the oaths of office, thereby creating a vacancy in the office of county superintendent of health.

Instead of proceeding to fill the vacancy by electing another, as was their duty, under the law, the county board of health on the....day of July, 1911, sixty days after Dr. McCullers' declination had been received, met and passed a resolution humbly petitioning Dr. W. S. Rankin, secretary of the State Board of Health, to appoint a county superintendent of health for Wake County, kindly suggesting therein Dr. McCullers as a fit person for the job.

Dr. Rankin graciously consenting, on the 17th of July, 1911, wrote Dr. McCullers of his appointment, having favorably considered the prayers of the county board of health in his behalf, and fixing his compensation by a schedule of fees—on a very remunerative basis indeed—although he was advised that to fix the compensation of a county superintendent of health on a fee basis, for this county, would be to fly in the face of the legally established policy of Wake County against the fee system of paying county officers. But who cared for that? In the words of a Vanderbilt, "The people be damned" with their policy!

The board of commissioners being advised that Dr. Rankin's appointment of Dr. McCullers was *ultra vires* and void, and that his compensation under the schedule of fees fixed by the secretary of the State Board of Health was grossly excessive, unjust to the county, and contrary to law, refused to recognize Dr. McCullers as county superintendent of health on a fee basis, and withheld approval of his bills—one of which amounted to $89.50 for eleven days ordinary professional service. Upon this as a basis of calculation, Dr. McCullers' fees as county superintendent of health would exceed $3,000 a year; and as like service could be had of other skilled physicians for $600 a year, or $50 a month, the county commissioners could not feel justified in approving bills based upon a schedule of fees so unjust to the county.

On the 2d day of November, 1911, Dr. McCullers brought his action against the board of commissioners, demanding a writ of mandamus compelling the board of commissioners to recognize his appointment as county superintendent of health, and directing said board to audit and approve his bills. The board of commissioners, answering his complaint, among other things, alleged that section 9 of chapter 62, Public Laws 1911, was unconstitutional and void; that the secretary of the State Board of Health had not authority to appoint; that the compensation arising out of said schedule of fees as fixed by Dr. Rankin was grossly excessive in that it would amount to more than $3,000 a year; that mandamus would not lie to compel "approval"; that Dr. W. S. Stevens, a skilled physician, was filling said office and performing the duties thereof for the sum of $50 a month, and moved the court to dismiss the action. The Superior Court sustained the contentions of the board of commissioners and rendered judgment dismissing the plaintiff's action. From that judgment Dr. McCullers appealed to the Supreme Court. By an opinion recently handed down (and published in full in *The Times,* with editorial comment not complimentary to the board of commissioners), the Supreme Court reversed the judgment of the court below, holding that section 9 of said chapter 62 was constitutional; that Dr. Rankin had authority to appoint, and that Dr. McCullers was entitled to the office. But the Court also held that Dr. McCullers' compensation must be passed upon and approved by the board of county commissioners before being paid, leaving the amount of the same to be determined in the sound discretion of the board of commissioners, *under the law,* whatever that may mean.

Being law-abiding citizens, the board of commissioners, in obedience to the opinion of the Supreme Court, will of course recognize Dr. McCullers' title to the office. But from that opinion they appeal to Cæsar—to the people themselves. I submit for their verdict and final judgment, the following issues:

1. Shall an act, such as section 9 of chapter 62, Public Laws 1911, as construed and held to be, depriving the people of the inherent right of local self-government, taking from them their control of local domestic affairs, remain on the statute books?
2. Shall the constitutional right of the people, exercised through their chosen boards of commissioners, to general control and supervision of the penal and charitable institutions and finances of the county be transferred from their hands into and remain in the hands of one man—a secretary of a State board—not elected by or answerable to the people?
3. Shall the ultimate power of appointing to a vacancy in a county office be and remain lodged in the hands of a secretary of a State board, and shall the salary or fees to be paid a county officer out of the county's general fund depend upon a schedule of fees fixed by or be measured by a standard created by the whim or prejudice or at the arbitrary will of a secretary of a board not elected by or answerable to the people?
4. If in their opinion it be contrary to the public interest, shall the board of commissioners be compellable to approve and pay bills for fees, that may aggregate $3,000 and more a year, to a county physician not elected by them or the people, for professional services, when like service can be had from another equally skilled, for $600 a year? And if so, why?
5. Shall the people demand of their representatives in the General Assembly a pledge to restore to the counties control of their local domestic affairs by repealing or amending chapter 62, Public Laws 1911?

Upon these issues, of far more vital interest to the people of Wake County than which one of the four distinguished candidates shall be United States Senator, as involving preconstitutional, inherent rights of the people to local self-government, I shall be heard, in due season, in the forum of the people. B. C. BECKWITH.

*DR. RANKIN ON THE SITUATION.

SECRETARY OF STATE BOARD OF HEALTH REPLIES TO COUNTY ATTORNEY—THINGS POINTED OUT.

Dr. Rankin Shows Why it is Duty of State, When County Refuses to Provide Protection, to Step in and Take Care of Whole People—Basis for Remuneration $1,200 or $1,500 a Year, and not $3,000, as Claimed by County Attorney and Commissioners—Interesting Communication.

To the Editor of The Times: Your paper under date of February 29 contains an article from Mr. B. C. Beckwith, attorney for Wake County, and, presumably, spokesman for the Wake County Commissioners, to which a reply from the secretary of the State Board of Health may not be altogether out of order.

SUM AND SUBSTANCE OF MR. BECKWITH'S ARTICLE.

A fair, unbiased mind, on carefully reading the aforesaid article with its five conclusions, stated as issues, can reduce all that Mr. Beckwith claims to two and only two contentions:

First, that section 9, chapter 62, Public Laws of 1911, under the *command* of which the secretary of the State Board of Health acted in appointing Dr. J. J. L. McCullers county superintendent of health of Wake County, is in violation of that which all good citizens prize as their most fundamental right—local self-government; second, that the basis of remuneration for the services of the county superintendent of health of Wake County, as fixed by the aforesaid secretary, is wrong in principle and excessive in amount.

We deny both of these contentions, and respectfully submit the following facts and conclusions in support of our position:

STATE HEALTH LAW AND LOCAL SELF-GOVERNMENT NOT INCOMPATIBLE.

This is best brought out by an examination of the provisions of section 9, under which Mr. Beckwith contends the State Board of Health is given authority that interferes with local self-government. Section 9 is as follows:

> The chairman of the board of county commissioners, the mayor of the county town, and in county towns where there is no mayor, the clerk of the Superior Court, and the county superintendent of schools shall meet together on the first Monday in April, one thousand nine hundred and eleven, and thereafter on the first Monday in January in the odd years of the calendar, and elect from the regularly registered physicians of the county, two physicians, who, with themselves, shall constitute the county board of health. The chairman of the board of county commissioners shall be chairman of the county board of health, and the presence of three members at any regular or called meeting shall constitute a quorum. The term of office of members of the county board of health shall terminate on the first Monday in January in the odd years of the calendar, and while on duty they shall receive four dollars *per diem*, to be paid by the county. The county board of health shall have the immediate care and responsibility of the health interests of their county. They shall meet annually in the county town, and three members of the board are authorized to call a meeting of the board whenever in their opinion the

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Raleigh Evening Times, March 4, 1912.

public health interests of the county require it. They shall make such rules and regulations, pay such fees and salary, and impose such penalties as in their judgment may be necessary to protect and advance the public health: *Provided*, that all expenditures shall be approved by the board of county commissioners before being paid. At their first annual meeting on the second Monday of May, one thousand nine hundred and eleven, and thereafter on the second Monday of January in the odd years of the calendar, they shall elect the county superintendent of health, who shall serve thereafter until the second Monday in January of the odd years of the calendar: *Provided*, that if the county board of health of any county shall fail to elect a county superintendent of health within two calendar months of the time set in this section, the secretary of the State Board of Health shall appoint a registered physician of good standing in the said county, who shall serve the remainder of the two years, and shall fix his compensation, to be paid by the said county, in proportion to the salaries paid by other counties for the same service, having in view the amount of taxes collected by said county.

This section, be it observed, places the care of the public health of the county in the hands of a board composed of men who, in a county where there are several political factions, would represent, in all probability, no one faction, and of men who, judging from their official positions, have the ability to appreciate their important responsibilities in connection with the public health. In other words, the county board of health is, as near as it is possible to make it, a body free from politics, it being recognized by the General Assembly, and all others who properly appreciate the importance of the public health, that the health and life of the people should not be used as an asset of politicians with which to pay off their political obligations.

In this county the board of health is composed of Hon. D. T. Johnson, chairman, board of county commissioners; Hon. J. I. Johnson, mayor, city of Raleigh; Mr. Z. V. Judd, Dr. Henry McKee Tucker, and Dr. G. M. Bell. I respectfully submit that this body compares favorably in ability and in devotion to the people's interest with the Wake County Board of Commissioners, or even with their learned legal adviser, so zealous in the protection of the people's interest.

Be it observed that under the law the county authorities have two months in which to provide an official whose duties are literally vital to the welfare of the public. Failing in this ample time to discharge this important function of their office, the State steps in, overrides official inertia or breaks a deadlock and gives the county a legally responsible official with authority to protect the health and lives of the people. And this is what Mr. Beckwith terms an interference with local self-government.

But why, if the accredited representatives of the people of a county really desire no legally responsible health officer clothed with the power of a sovereign State to enforce the laws that stand between pestilence and life, should the State insist upon their having one? Is such a condition not their own affair? No, and no ever since the Judge of judges declared that "no man liveth unto himself." No, because natural laws enacted by the Legislator who never erred, and which are not subject to repeal by a board of county commissioners, enforce the afore-quoted principle of life through the agency of infection—an agency that respects no county boundary, an agency more active as our civilization grows in complexity and the facilities of travel are improved, an agency, operative through bonds of common suffering and sympathy, that is drawing the great human family into a more mutually dependent, powerfully coöperative, organic whole. To conclude our reply to Mr. Beckwith's first contention: Those who admit the operations of those divine or natural laws which we have just referred to must concede that the State owes to her confederate counties protection from any county which, for any reason, fails after the lapse of a *reasonable* time to provide an official who can be held legally responsible for disease-disseminating nuisances and epidemics that endanger, disable, and kill the citizens of neighboring and even distant counties.

THE SYSTEM OF REMUNERATION FOR COUNTY HEALTH WORK.

There are two ways to render a bill or account: one in the form of a lump sum "for services rendered," in which the particular services rendered, the items, are unstated and unknown; the other, in the form of an itemized statement in which each particular service rendered, with the amount charged for it, is so stated as to be subject to public investigation, and, if necessary, criticism. To fair-minded people we respectfully submit that where there is likelihood of a controversy over an account, it is safer and wiser to have the account submitted item by item. The public can then see exactly what they are paying for each service, and criticism may be specific, to the point. Recognizing the likelihood of a controversy, we declined the advice of friends and deliberately authorized a basis for remunerating the county health officer so that he would be paid only for what he did and so that the amount paid for each item of service could be seen by any one interested. So much for the "fee system"; and now a few words in regard to

THE AMOUNT OF REMUNERATION.

The law requires the secretary of the State Board of Health to fix the compensation of a county health officer, appointed by him, in accordance with salaries paid by other counties of equal wealth for such service. Now, let us see how Wake County compares in wealth with other counties, and what some of the other counties are paying their health officers. Wake is the second county in population, second in size, and fourth in wealth of the counties of North Carolina. The salary of $600 a year which the commissioners wanted to pay their health officer would place Wake seventeenth in the list of counties in the total salary paid the health officer, or, if we look at the amount paid the officer from a *per capita* standpoint, Wake would be forty-fifth among the counties.

The schedule of fees fixed as the basis of remuneration for the health officer of Wake County will aggregate in a year about $1,200 to $1,500, and not $3,000, as claimed by Mr. Beckwith. The eleven days service for which a bill of $89.50 was rendered were the last eleven days of the month when Dr. McCullers took charge of the work. All of the county institutions had to be inspected in that time, and there was in all probability an unusual amount of sickness among the wards of the county at the time. Now that Dr. McCullers is to be officially recognized, we confidently leave to the next two or three months the refutation of Mr. Beckwith's claim that the health officer's compensation will aggregate $3,000 a year. It will not exceed $1,500 a year, and we believe that, if that provision of the law which permits the county health officer to save mileage to the county by employing the nearest regular physician to a convict camp or county home to attend a sick inmate is duly regarded by the health officer, the amount paid for this work will not exceed $1,200 a year. We fixed the compensation of the health officer just as the law prescribes, that is, in accordance with the compensation of health officers in other counties of the State of like wealth to Wake.

But Mr. Beckwith says that a skilled physician could be obtained for $600 a year, and he leaves the inference that all in excess of that amount paid the county health officer is gross extravagance. Was the skilled physician employed the cheapest available? What county offices or State offices could not be filled by cheaper men than their present occupants? And some of the cheaper men would be just as efficient officials as a few now in office. Even the office of Wake County attorney might be let to a cheaper man, and one, too, who would not put his county to an expense which will exceed the cost of an entire year's health work by contesting in the courts the constitutionality of an act that the Supreme Court *unanimously* upheld.

The laws affecting officeholding do not recognize the *lowest* salary for which officials may be obtained as the *best* salary to attach to an office. An equitable compensation sufficient to secure the application of *many* good men gives the electors the privilege of exercising some choice in the selection of officials. A salary so small as to restrict the electors to only a few men in filling important offices is detrimental to the public welfare.

For fifteen years the salary of the health officer of Wake County has ranged between $500 and $600 a year. During this time the population has increased 20 per cent, the wealth 40 per cent, new duties have been added to the health office, and science has multiplied the opportunities and increased the responsibility of these officials. With a salary of only $600 a year for the health officer, the choice of the people must become more restricted as the county develops.

Wake should be in the same class with Guilford, Robeson, Durham, and New Hanover, where health officers are employed at salaries of from $1,800 to $2,500 and give their entire time to their work. Certainly we should not pay less than $1,200 a year, which will permit the health official to not only visit the sick in county institutions, but to do that which is far more important, carry on an aggressive campaign of disease prevention.

The *choice* of a health officer was left entirely with the authorities whom the law appoints to make this selection. The county board of health recommended Dr. J. J. L. McCullers for the place, and recognizing the *fundamental principle* of local self-government, he was appointed by the writer. It was after the recommendations of the county board of health had been acted upon by the State Board of Health that the commissioners went out, sought, and obtained a physician who agreed to do certain of the county public health work for $600 a year.

We repeat that, *any* vacancy in county offices filled by appointment at an equitable salary could be criticised on the ground that *after* the office was so filled, another person could be found who would agree to accept the office for a smaller remuneration. W. S. RANKIN,

Secretary State Board of Health.

*MR. BECKWITH COMES AGAIN.

REPLIES TO DR. RANKIN IN THE COUNTY SUPERINTENDENT OF HEALTH MATTER—QUESTION OF RIGHTS.

Issue Not One of Men, But of Rights Older Than the Constitution—County Commissioners Abide by the Law as Interpreted, But They Have an Abiding Faith that the Rights of the People to Manage Their Own Affairs Shall Not Be Permanently Abridged—Not Afraid of a Writ of Mandamus.

To the Editor of The Times: In an editorial commenting on the county attorney's communication in the McCullers case, you said he "missed the point." Maybe so. But in shelling the woods he (the county attorney) unmasked and drew the fire of a heavy battery supporting the line of attack against the rights of the people of Wake County to govern themselves and to attend to their own local affairs.

But, unless the unmasking of the Doctor's battery riled him, there was and is no cause for a rise of temperature in the office of the secretary of the State Board of Health; for "I am not mad, most noble Festus; but speak forth the words of truth and soberness"—appealing to Cæsar, that the people may know the inwards of this matter.

The vital issue in the McCullers matter shall not be clouded by hot vapors blown into the face of the county attorney, or obscured by dust flung at the heads of the county commissioners.

The issue is not *men*, but *measures*. And it is the iniquitous measures contained in the "health act," that the secretary of the State Board of Health boasts were unanimously upheld by the Supreme Court, to which the people felt constrained to hold that the enactment of chapter 62 of the Public Laws of 1911 "was a valid exercise of legislative power"; the Court did not hold that it was a just exercise of that power.

With all due deference that a lawyer owes the opinions of that high Court, that act, as interpreted, deprives the people of Wake County of their inalienable right of local self-government, and in great measure takes away their constitutional control of the penal and charitable institutions of the county, and ought to be, if it is not, unconstitutional and void as contravening the spirit of local self-government which underlies the Constitution and is inherent in the people, for the people did not surrender that right when they adopted the Constitution.

That act, as interpreted, places in the hands of an "Outlander" secretary of a State board the ultimate power of appointing and fixing in fees the compensation of a county officer, who has superior control of large interests of the county, and that too without consulting the wishes of the people as to their choice and contrary to the legally established policy of the county against the vicious and corrupt fee-system county officers.

Let us see if it does not, by quoting here from the act itself: "*Provided,* that if the county board of health of any county shall fail to elect

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**Raleigh Evening Times*, March 9, 1912.

a county superintendent within two months of the time set in this action [which the county board of health, for causes best known to themselves, promptly proceeded to 'fail' to do], the secretary of the State Board of Health shall appoint a county superintendent of health, and fix his compensation to be paid by the county"—both of which powers the said secretary of the State Board of Health very promptly exercised without consulting the county commissioners, the ones most interested, although they, through their chairman, asked to be considered as being interested for the county in both the officer and his pay. The choice of the secretary fell upon that one whom the county board of health, having failed to reëlect, humbly petitioned the secretary of the State Board of Health to appoint. Of course!

The county board of health having authority under the act to fill the vacancy occasioned by Dr. McCullers' declination to qualify upon the May election, and after the board of commissioners had recognized his title to the office under that election, but had declined the proposition of the county board of health to approve a salary of $2,500 to be paid by the county, but had approved of a salary of $600 a year—a just and reasonable compensation for the work to be done—the questions naturally arise: Why didn't they reëlect Dr. McCullers? or why their delay for two months in electing another, till Dr. Rankin's power of appointing attached and became operative? and why humbly petition. as to a superior, Dr. Rankin to appoint Dr. McCullers, and to fix his fees after McCullers had eliminated himself by declining their May election?

'Tis here the people smell the nigger in the woodpile, and ask: How cum?

Was the county board of health fearful of the people's disapproval of its choice? Was the salary or fees demanded by their chosen one more than they thought the people would stomach? Or, fearing to face the people with their choice and his bills for fees, did they deliberately shield themselves from wrath to come behind the secretary of the State Board of Health, who does not owe his lucrative office to the favor of the people, and cannot be called to account by them for appointing a man to office and fixing his compensation on a condemned fee basis and on an excessive amount, many times greater than the $600 a year salary that others, just as good, were willing to accept as compensation for their services?

That high-handed invasion of and disregard of their constitutional rights forced the commissioners to call a halt and to defend the suit brought against the board of commissioners by Dr. McCullers. The commissioners did not seek to begin the fight. They have acted in self-defense, in the interest of the county.

But the secretary of the State Board of Health says: "I respectfully submit that this body (meaning the county board of health) compares favorably in ability and devotion to the people's interests with the Wake County Board of Commissioners, or even with their learned legal adviser, so zealous in the protection of the people's interests."

Why throw that handful of dust? Who has questioned their ability or devotion? Let it be granted that they excel in these virtues; yet if the acts and the words of the secretary of the State Board of Health be taken, the fact remains that they failed to discharge a legal official duty, thereby shifting their sacred responsibility for the health of the people to the hands of the secretary of the State Board of Health, who (and what more could be said) condemns them after this fashion: "Be it observed, that under the law the county authorities (meaning the county board of health) have two months in which to provide an official whose duties are literally vital to the welfare of the public; failing in this ample time to discharge this important function of their office, the State steps in, overrides official inertia or breaks a deadlock, and gives the county a legally responsible official with authority to protect the health and lives of the people. And this is what Mr. Beckwith terms an interference with local self-government."

And Mr. Beckwith is correct; for by contrived negligence, procured concert of action, political cowardice or combination or fear of responsibility, the ultimate choice of a county health officer in every county and the fixing of his salary or fees is put into the hands of a mere secretary of a State board, and the people are thus deprived of selecting their own officer or of fixing his pay. But they have the inestimable privilege and pleasure of paying the bills.

And with this privilege left them by this "health act," the people ought to be content. Are not their backs broad? Surely they ought to be glad to pay fees that will enable their county doctor to ride to this camp and from that institution in style befitting the appointee of the secretary of a State board!

The secretary of the State Board of Health, in his four-column communication, quoted a part of section 9 of the "health act." But he did not quote the following pregnant proviso:

> "*Provided*, that the county superintendent of health shall have the right to employ and to fix the compensation of any other regularly registered physician of his county, to perform any or all of the duties pertaining to the jail, county home, or convict camps when in his judgment it is desirable to do so."

Read that over, and read it yet again, and then go back and gently and prayerfully, if you can, glide through that provision, word by word, and then wonder at the sublime patience of boards of county commissioners. In the words of the immortal Vance, "My God, Abernathy!" Here we have the appointee of an appointee (neither of whom is answerable to the people) given discretionary power to appoint yet another officer and to fix his fees without limit to anything. And yet the county commissioners pay a fee salary of $2,500 or more—plus whatever the county superintendent of health may see fit "to fix" for that other doctor, and be glad it's no worse, or go to jail.

They boast that the Supreme Court has upheld the validity of their act and gloat over what they allege is the failure of the board of commissioners to place a barrier between these appointees and the treasury of the people, and threaten with a peremptory bill of mandamus, and thus, by implication, with the jail, the commissioners of the people if they dare refuse approval of their bills.

To their interpretation of their act and of the opinion of the court the board of county commissioners has not yielded and will not assent, if they follow the advice of the county attorney, till such time as they shall have exhausted every legal means of resistance at their command.

We believe the people of Wake are willing that their chosen commissioners should spend the public money in defending the people's right to choose their own local servants, fix their pay, and manage their own domestic affairs. They would justly condemn their servants for failure to defend to the uttermost any attack on the right of the board of commissioners to watch over and safeguard the county treasury against spoliation, even under the specious guise of protecting the public health.

Now, the county attorney has no personal quarrel with any. The issue is far above mere persons. It involves rights older than our Constitution—that were hoary with age before the Boston tea party; rights fought for and won back by ville and town and Mark from King, and baron, and abbot, who had with iron hand or lying tongue, by force or fraud, taken them from the people; rights that our forefathers, even here, thought worthy of being maintained with treasures and blood at Alamance, at Moore's Creek, at Guilford Courthouse, at Kings Mountain, and made good at Yorktown—the right of local self-government and the control by the people of their own money.

The extortions of the fee system (again attempted to be fixed on us by this secretary) of paying officials was one of the main grievances that led to the regulator troubles of our fathers.

The board of county commissioners while bowing to this act (for law it is, though of questionable parentage) as interpreted by the Supreme Court, in recognizing Dr. McCullers' title to office, still have an abiding faith that soon again the constitutional "right of the people of the county to manage their own affairs shall not be abridged or denied except under the pressure of a plain and positive requirement and when no alternative in the law is admissible." We devoutly pray that the court may soon return to the sound law of that opinion. And in the words of a learned associate justice of our Supreme Court, used in Jones v. Commissioners, 135 N. C., 223, we pray it may soon again be held to be "without precedent in this State, if the Legislature should assume to know the wishes and interests of the people of any county better than the county commissioners." In this case, it is not the Legislature only, but a board of health and a secretary of a State board who has assumed to know the wishes and interest of the people of Wake County better than the county commissioners, the duly elected servants of the people and answerable to them for the proper management of the affairs of the county.

In conclusion, I want to say that I assume full responsibility for having the board of commissioners not to recognize the authority of the secretary of the State Board of Health to appoint a county superintendent of health and to fix his compensation on a fee basis, to be paid by the county, contrary to the legally established policy of this county, till they were compelled to do so, by the order the Supreme Court. I also have advised them not to surrender, without a fight to a finish, the theretofore supposed right of the board of commissioners in its sound discretion to disapprove and not allow payment of any disputed claim or demand against the county until the justness and reasonableness of the claim or demand had been determined.

I shall continue to advise them, so long as they ask my advice. I shall never advise them to tamely surrender the people's right to local self-government—the right to control their purely local affairs—into the hands of any one man or body of men, under any pretext whatsoever.

When the courts unquestionably decide that they have not the discretion to approve or disapprove claims against the county, but that the board of commissioners is a mere auditing committee whose only duty is to add up columns of figures, to see that the addition, subtraction, or multiplication is correct, then I shall advise them, but not till then, to be afraid of a writ of mandamus. B. C. Beckwith.

NONPARTISAN BOARD OF HEALTH.

The Object of New Health Law—Compared to School Board.

To the Editor of The Times: The last article that appeared in your paper from Mr. Beckwith was very largely a repetition of his first communication relative to the McCullers case. There was a more extensive criticism of the Wake County Board of Health and less about the remuneration of the Wake County health officer than in his former article. He makes about the same effort to prejudice the popular mind against a fundamental principle in health administration, to wit, the divorcement of the county health work from politics in almost exactly the same way in which the county educational work has been removed from political influence.

THE QUESTION OF REMUNERATION.

The law regulating the fixing of the remuneration of a county health officer by the secretary of the State Board of Health is in these words: "shall fix his compensation, to be paid by the said county, in proportion to the salaries paid by other counties for the same service, having in view the amount of taxes collected by said county." In *strict accordance* with that law, I fixed the remuneration of the Wake County health officer. I proved this conclusively in my reply to Mr. Beckwith's first article by citing the position of Wake among the other counties of this State in respect to comparative wealth, size, population, and the total and *per capita* amounts paid their health officers. Mr. Beckwith cannot refute this statement. If the law had said, "shall fix his compensation in accordance with the amount for which the lowest bidder agrees to discharge the duties of county health officer," I could have secured a man, very probably, for even less than $600 a year, and a man, too, who possesses those legal qualifications that entitle him to pass as a skillful physician. But, if this were law, then the most important position for a physician to occupy in any county would be let to the least qualified physician.

MR. BECKWITH'S BUGABOO TO LOCAL SELF-GOVERNMENT.

The General Assembly, the people's representatives, have placed the health work *and* the school work of the counties which they represent under the supervision of a county board of health and a county board of education respectively. They have designated to serve on these boards well-known and honored men of the county in which they serve. This is no violation of the principle of local self-government, but the creation of a nonpartisan agency, in the form of the two boards aforesaid, to administer those two phases of local self-government that has to do with the health, life, and education of the people.

Will a county educational system, in which the county commissioners elect the county superintendent of schools and through him choose those teachers whose friends can exercise the strongest political influence, give you better educational facilities than our present system? Indeed it will not. When boards of commissioners that represent political parties or factions choose health officers, which will influence them most in their choice of an official, his professional qualifications or his political power? When they are considering the enactment of sanitary rules and regulations, the abatement of nuisances such as the drainage of mill-ponds, the removal of hogpens, etc., will political influences sway their judgment? Should it? If the principle of nonpartisan control of health work of a county is wrong, then the principle is wrong again when it is applied to the management of our educational system. As a matter of fact, both are right, and for that reason will be maintained.

A nonpartisan county board of health has an important and altogether proper place in the machinery of county government and does not conflict with local self-government. As such the Wake County Board of Health began their official work on the second Monday in May, 1911. Their first action was to unanimously elect a county superintendent of health for his entire time and to recommend, for the approval of the board of county commissioners, an annual salary of $2,500. The man elected to the office of county superintendent of health was Dr. J. J. L. McCullers. He was not the choice of the county commissioners; they wanted another man. Displeased with the action of the county board of health in not electing their man, they passed the following resolutions on the 6th of June, 1911:

"*Resolved*, That the salary of the county physician shall be $600 per year, on condition that he visit the county home and county jail at least once a week, and each of the county road camps once in two weeks, and that in addition to these regular visits he shall promptly respond to special calls from the superintendent of county home, the sheriff in charge of the jail, the respective camp supervisors or the county supervisor of roads.

"*Resolved, second*, That the visiting days above provided for shall be:

For the county home	Mondays.
For the county jail	Mondays.
For the road camps	every other Wednesday.
For the road camps	every other Thursday.

Resolved, third, That in case the county physician shall fail to attend the appointments above set out, his salary shall be docked ten dollars ($10) for each failure; and if he fails to respond to any special call within twelve hours his salary shall be docked ten dollars ($10).

Resolved, fourth, That the superintendent of the county home, the sheriff of the county, and the several camp supervisors shall report, as to the visits of the county physician, to the regular monthly meetings of this board."

Examine these resolutions carefully. Note the fixing of the health officer's remuneration at the same figure where it has remained for twenty years, while the county has grown 20 per cent in population and 40 per cent in wealth—at a salary that places Wake, the second county in size, second in population, and fourth in wealth, *fifteenth* in the total salary and *forty-fifth* in the *per capita* salary paid their health officers by the counties of this State. Note, again, that these resolutions, not content with the penalties imposed in the last sentence of section 11, chapter 62, Public Laws of 1911, upon health officers who neglect their duties, place *additional* penalties upon the unanimously elected official of the county board of health, as if this body had so lightly held their responsibilities as to have chosen as health officer a man more criminally inclined than the other ninety-nine health officers of this State. Note, finally, the stringent refringements of these resolutions as to set times at which certain duties must be performed—duties that could be performed Tuesday or Friday as well as Monday or Wednesday, duties not of an urgent character, but by the orders of the Wake commissioners given precedence over the call of a surgical emergency or the woman in her travail. When the commissioners elected, without legal authority, a man of their own choice as health officer, they never placed him under the stringent, and almost prohibitory, requirements of the resolutions already quoted. This shows as well as anything else the personal element in their official action in the McCullers case.

These resolutions had but one purpose, and that to prohibit the health officer elected by the Wake County Board of Health from accepting his office. The commissioners wanted another man. The commissioners showed, as clearly demonstrated in the aforesaid resolutions, not the slightest disposition to coöperate with the county board of health and reach a mutual understanding in regard to the health officer's remuneration. On the other hand, they deliberately disregarded the county board of health as an important coördinate branch of county government. It was after this treatment, that the county board of health, as any other self-respecting set of men would have done under the same circumstances, deliberately decided to leave the matter for settlement to the secretary of the State Board of Health. It was in deference to the expressed wishes of the Wake County Board of Health, whom I recognized as representing the health interests of Wake County, that I appointed Dr. McCullers; and, it was not at the lowest figure for which an occupant of this important office could be had that I fixed his remuneration, but, *in accordance with the law,* the remuneration of the Wake County physician was placed at a figure in keeping with the class of progressive North Carolina counties to which Wake County belongs in public health work.

W. S. Rankin, *Secretary,*
North Carolina State Board of Health.

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OF THE

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This same man, mind you, considers the housefly a useful scavenger. It is all a matter of education and custom, and not a matter of taste. Now, as a matter of unprejudiced fact, barring the sting of the bite and the odor of the encounter, the bedbug is much the more eligible companion, whether of bed or of board. But if bedbugs, comparatively cleanly of habit, crawled all over your plates, table, and food, just as the houseflies crawl, fresh from foulest filth of every pestilential kind—who could eat or even sit at the table for a moment? I am not making a plea for the elevation of the social status of my nocturnal friend, who loves darkness rather than light; but I am declaring that his deeds are not nearly so evil and destructive as those of the housefly, who can boast his love of light and his love of filth.

Twenty years from now, if not sooner, let us hope that the fly will have lost his social status, and his presence in a house be considered as disgraceful as it is dangerous.—Dr. Cyrus Thompson, on "The Fly and Filth," in this Bulletin.

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EDITORIAL

FOREWORD

This bulletin may be divided into two parts, according to the two main subjects of which it treats—flies and babies. If anyone should wonder why the association, we would say that although the two are far apart in nature they are so closely associated by this season of the year that they fall within the same visual field of the sanitarian.

All of the articles on the fly are excellent, as the names of their authors would suggest. Mr. Lay's article is by far the most comprehensive we have seen in suggestions for suppressing the fly nuisance and danger. The article by Dr. Hays is very instructive in showing the intimate relation of the fly to disease. The article by Dr. Thompson on "The Fly and Filth," even without the writer's signature would reveal the author to any one who has read very much from Dr. Thompson's pen. This statement is our highest recommendation to the reader of this valuable contribution to the BULLETIN from Dr. Thompson. Of all the fly literature we have read, this paper is the best thing that we have seen, and the comparison of the social status of the fly and the bedbug will certainly find an important place in the anti-fly campaign material of the future.

As to the part of the BULLETIN devoted to the baby: Mothers should read this for the babies, if not to them. The pictures, charts and figures may be found instructive, even though the subject does sometimes lose its interest and become tiresome. A mother owes it to her dependent baby to take every precaution to guard its tender life. Maternal instinct, that quality of the heart, means much to the child, but if that instinct is as strong as its trust demands, it will add to the protective forces of the baby's life maternal intelligence, that quality of the mother's mind that can be had only by proper study of those conditions that powerfully influence the baby's life for good or bad during the pliable period of infancy. We offer the facts contained in the article on the baby with the hope that the mothers of this State may find them helpful in saving the 75,000 babies that are annually entrusted to their love and care.

The remainder of the BULLETIN is devoted to a controversy between the Buncombe County Medical Society and this office over the management of smallpox without quarantine. In view of the fact that much space in our last BULLETIN was devoted to a controversy over the right of the State to interfere in county health work under certain conditions, and that much of this BULLETIN is also occupied with controversial matter, we feel that a word of explanation may be in order. We do not like controversies, but we believe that they are very useful in crystallizing public opinion on matters of importance upon which there is disagreement.

THE FLY AND FILTH

By Dr. Cyrus Thompson, Contributing Editor of The Bulletin. Jacksonville, N. C.

To lift men out of old ruts is always a slow and thankless task. When you would rouse to new action men ordinarily intelligent, you are met with querulous irritation: "A little sleep, a little slumber, a little folding of the hands to sleep."

In a daily paper published in a great Southern city, I read only the other day this pert editorial paragraph: "Another bad thing about mosquitoes and flies is the lectures about them." So the sluggard would keep his bed; and so a sinner might say that another bad thing about sermons and appeals for right living is that "they hit my sins and disturb my sleep."

If one living in a country where flies are unknown (if such country there were) should be transferred to our own summer homes, he would come upon the housefly problem with entirely different feelings from those that are experienced by the natives. But men get used to anything, even filth and flies, and pestilence and death. The rollicking fun of the Decameron was played in the face of the Plague.

"Exterminate the flies!!" said a farmer to me one day; "why the flies are useful creatures, a little troublesome sometimes, to be sure, but they are scavengers about our homes, wisely provided by nature, like the buzzard of the air; and I just don't see how we could get along in the summer time without flies. They clean up the filth about our premises."

This was an average man with the average vision in an average community. He had been reared to feel that houseflies, like mosquitoes, ticks, and various reptiles, were necessary and inevitable concomitants of the summer time. Maybe we shall be able to teach his children to assume a different mental attitude. They may learn that a buzzard is a safer and more genteel scavenger than a housefly, a really helpful and harmless high-flyer, taking away something and bringing in nothing, an aviator not to be thought of in comparison with the filthy low-flyer about our houses, which with equal zest revels in filth and relishes dainties, carries away nothing and brings in everything.

My average man would, of course, reject his cup of coffee into which a fly had haply fallen, or his glass of buttermilk into which presumption had dashed an individual unfortunate to sudden death, or his bread that enshrouded one untimely done; but the fact that the solid portions of his food had been the playground and festal board of the reeking feet of the living swarm would be accepted by him as so natural and inevitable that his food would not lose its flavor, nor his palate its relish because of these pestilential additions. So great is his respect for and abhorrence of the dead and his tolerance of the living; so custom makes him happily inert in the dangers that swarm about him.

A man can get used to anything. Tired out on a second night's vigil not long ago, I lay down on a clean bed for a little rest and sleep. After an hour or two they called me and I got up to look after my patient. As I sat thinking, a kind old lady leaned toward me with outstretched fingers and flicked my collar, saying, "Hold on; there's a traveler, I believe. Well, it's a-getting about time for 'em to begin to move around." It was not a housefly; it was a wingless bug of the horizontal flat variety, the *cimex lectularius,* a common bedbug that fortunately had not bitten me. I related this incident to my average man and he was horrified. He exclaimed that he would hate to be a doctor and take such chances as that.

This same man, mind you, considers the housefly a useful scavenger. It is all a matter of education and custom, and not a matter of taste. Now as a matter of unprejudiced fact, barring the sting of the bite and the odor of the encounter, the bedbug is much the more eligible companion, whether of bed or of board. But if bedbugs, comparatively cleanly of habit, crawled all over your plates, table and food, just as the houseflies crawl, fresh from foulest filth of every pestilential kind—who could eat or even sit at the table for a moment? I am not making a plea for the elevation of the social status of my nocturnal friend, who loves darkness rather than light; but I am declaring that his deeds are not nearly so evil and destructive as those of the housefly, who can boast his love of light and his love of filth.

Twenty years from now, if not sooner, let us hope that the fly will have lost his social status, and that his presence in a house will be considered as disgraceful as it is dangerous. The only good thing about houseflies is the "lectures about them."

Other papers in this BULLETIN will consider flies in their relation to disease and the methods effective for their extermination. This brief paper is intended only to point out the relation of flies to filth and to emphasize their exceeding filthiness. If there were no filth there would be no flies; and if there were no flies there would be much more of common decency and much less of human disease and untimely death.

Flies may feed and live upon our daintiest viands or the filthiest matters that they find in their way. As to the matter of living, they are of great adaptability and utterly without discriminating taste. But they breed only in filth. They may breed in garbage heaps that contain decaying vegetable or animal matter; they may breed in human excrement in open privies; they may breed in pigpens and on cow manure; and most of all in horse stables. They breed on any foul substance where fermentation is going on. Cow manure, drying rapidly and crusting over and less given to fermentation because of lack of carbohydrates, offers a less favorable nidus than human excrement or horse manure. Their favorite breeding place is the horse stable; but next after that the human excrement in open privies, perhaps, attracts more flies for feeding and breeding purposes than any other substance. And flies bred in privies are manifestly filthier than those bred in stables, and are actually more dangerous to human health, because of the infectious character of the foul stuff they breed in and feed upon.

Their eggs will be laid, as we have said, upon any animal excreta or decaying vegetable or animal matter; that is, wherever there is fermentation, which condition presupposes heat and moisture. If it were possible to have filth without heat and moisture, then we could have filth without flies. Heat and moisture for purposes of breeding and feeding are of absolute necessity. Filth, heat, and moisture are the three things necessary for the propagation and development of the housefly. It is for this reason that flies are less numerous in winter than in summer; less numerous in a cool summer than in a hot one; less numerous in a dry summer than a wet one. You have noticed how they come in literal swarms full grown after a hot spell in wet weather.

As to the manner of propagation and the security of the fly against race suicide, it need only be stated that a female fly lays on the average not less than one hundred and twenty eggs at a time, and lays certainly several times during a season. In summer weather the eggs hatch in eight or ten hours after they are laid. The larva, as it issues from the egg, burrows at once into the substance upon which the egg was laid. Undergoing successive stages of development, it is transformed to the pupa in five days. The larvæ are always exceedingly active and descend from the surface to the interior of the breeding place as they approach the pupal stage. This stage lasts about five days; and when the pupal stage is about to end the pupa makes its way toward the surface, the fly emerges, and leaves its sheath, full grown. It crawls around for a little while until its wings dry, develop and unfold. Then setting out from its foul breeding place, it feasts at your privy and greets you with unwashed lips and unwiped feet in your parlor and at your dining table.

The life process, from laying of the egg to the fullgrown fly, in warm, wet weather is ten days or less; though under less favorable conditions, as in early spring or late autumn or cool, dry summer weather, this period may be lengthened. After getting out from their breeding places, in ten days they are sexually mature. The original flies that lived throughout the winter and were first to lay in the spring time may in our climate certainly be the progenitors of ten separate generations, and each successive generation may propagate its species through the remainder of the season in such astonishing numbers and at such brief intervals. To kill them after they have come is so nearly impossible that the wisdom of the situation is to prevent their coming. If ever there was a condition where an ounce of prevention is worth a pound of cure, surely it confronts us here.

Clean up and get rid of your fermenting filth. Give them no place to breed and their feeding will not trouble you. Dry out your garbage piles, screen your privies, and dispose of your stable manure once a week, that is, within the time of the life cycle of the fly, and you will have destroyed him before he comes.

THE FLY AND DISEASE

By Benj. K. Hays, M.D., Contributing Editor of the Bulletin, Oxford, N. C.

It is a matter of common knowledge that health is the result of adaptation to environment. Man can not live under the water as fishes do, nor can he live in an atmosphere of extreme heat or cold. He can not live without food, nor can he continue to live if food be taken in excessive quantities. There is a limit to the amount of physical exertion which man can undergo, while it is impossible to keep the body in the best condition without some exercise. It is necessary that man pay some attention to his eliminative organs and to see that his excretions are thrown off with due regularity. He who neglects nature's demands in regard to the air that he breathes, the food that he eats, the temperature of his body, rest, exercise and elimination, soon falls a prey to disease.

And yet the neglect of those simple hygienic precautions is rarely the sole cause of death. Men rarely die in this country for the immediate want of food or air, nor from exposure to extreme heat or cold. They do not fall dead from overwork, or from the immediate effect of remaining still. The undernourished man usually contracts tuberculosis, as does he who is denied an abundance of fresh air. Men who are exposed to cold die of pneumonia, while those who are overheated contract fever. Overeating causes death by producing intestinal fermentation which may lead to a multitude of diseases, and the same is true of defective elimination.

INFECTION.

In looking for the cause of disease there is in almost every case a factor to be considered other than the neglect of hygienic laws. There is an extraneous something which has been introduced into the body which is called an infection, and diseases so produced are spoken of as infectious diseases. Heat, cold, fatigue, digestive disturbances, and emaciation render the body more suspectible to diseases of an infectious nature, but it is well known that men in perfect health are often attacked. A poison passes from the diseased person to the healthy one. This poison is the infective agent, and its nature and method of entering the human body is the subject with which we are now concerned.

THE NATURE OF INFECTIONS.

Experience has taught us that the various infectious agents give rise to like conditions in different people. For example, one does not contract pneumonia from a person suffering with smallpox, nor typhoid fever from measles. The poison, finding lodgment about the person attacked. reproduces itself in that person's body, thereby showing that it has life and power to grow. The poisonous or infective agent breeds true, like producing like.

The nature of infective agents was not understood before the middle of the last century. Since that time an immense amount of study and investigation has been given to the subject. Many of the disease producing agents have been isolated and can be seen under the microscope. Their life history is fairly well understood, and much has been learned about the manner in which they invade the organism, the conditions favorable to their growth and the natural means whereby the body in a state of health repels them. The source of many infections has been learned also, and as a result of this knowledge some diseases have been rapidly brought under control. For example, the knowledge that the parasite that causes yellow fever is conveyed by the mosquito has enabled civilized man, by stamping out the mosquito, to banish that disease.

ANIMAL PARASITES.

The number of parasites that may live within or upon the human body is very large. Some of them belong to the animal kingdom, but most of them are vegetable. Those which produce disease are called pathogenic. In addition to the pathogenic parasites there are many others which, while not disease-producing within themselves, are disease carriers. Prominent among these are the housefly (to be discussed later), the tsetse fly which carries the trypanosoma gambiense which causes trypanosomiasis or "sleeping sickness," the mosquito which carries the poison of yellow fever and of malarial fever, fleas from rats which carry the poison of plague, and ticks which may convey various diseases from animals to man.

Human parasites are not always microscopical in size. The body louse and the itch mite may be seen by the naked eye, as may be many of the various families of worms that live in the intestinal tract. The single celled animal parasite, microscopical in size, is spoken of as protozoa or amœba. Among the more common diseases caused by these minute animal organisms are malarial fever and dysentery. The former is caused by a hæmatozoön which lives in the red corpuscles of the blood, and is introduced into the human body by the bite of the mosquito. The latter is due to the amœba dysenteriæ, and is found in great abundance in the stools of persons suffering with tropical dysentery.

VEGETABLE PARASITES.

The vegetable parasites, commonly spoken of as germs or bacteria, are the immediate cause of most infective diseases. Bacteria are the smallest living things known, some measuring not over 1/150,000 of an inch in diameter. The different bacteria differ in size and shape. The cocci are ball-shaped, the bacilli rod-shaped, and the spirillum corkscrew-shaped. "They consist of a jelly-like substance called protoplasm, which is covered in and held in place by a well formed membrane of a relatively hard and dense character, exactly similar in composition to the woody fiber of trees. These simple plants increase by a simple method of division into two equal parts, or by a more complex process of forming a seed—the socalled spore—which later develops into the adult form." (Osler.) These minute organisms, having found their way into the body, grow there much in the same way as seed do in the soil.

Of the many diseases produced by bacteria a few of the most important will be mentioned.

Typhoid fever. This disease is caused by the bacillus typhosus of Eberth. It gains entrance to the body through milk, water and food. It causes an ulceration of the bowels, and in these ulcers the germs are found in great quantities. They are thrown off with the excreta. Therefore the great danger from exposure to or the handling of the excretions of typhoid fever patients. Even after a patient has recovered from an attack of typhoid fever the living germs may remain in the bowels for many months, and his excretions may cause the disease in those who come in contact with them.

Diphtheria. Caused by the Klebs-Loeffler bacillus, which usually finds lodgment in the tonsils. Secretions from the mouth and nose of a diphtheritic patient contain quantities of the germs. These under favorable conditions will sometimes live for years outside of the body. The poison may lurk in the cracks of a room where there has been a case of diphtheria and give rise to another case long afterward.

Tuberculosis. Due to the bacillus tuberculosis, and finds lodgment in the parts affected. Pulmonary tuberculosis is an affection of the lungs. In such cases the expectorated matter contains the germs. In tuberculosis of the bowels the germs are found in the excreta.

IMMUNITY.

When a given disease will not attack certain individuals, such individuals are said to be immune to that disease. Nature has devised various means whereby the body of man is protected to a greater or less extent against disease. Immunity, or the method by which nature enables the body to resist disease, is at present considered one of the most interesting branches of medicine, since most of our knowledge of this subject has been acquired within the past quarter 'of a century.

There is an almost constant combat going on between the tissue cells of the body and invading germs. This may be likened to the conflict of the police force of a city with those who are engaged in riot or disorder. When the mob can not be resisted disease prevails, but when the police force is able to control, health is the result.

THE FLY AS A CARRIER OF DISEASE.

From what has been said it is readily seen that disease-producing germs are frequently carried from the sick to the well by flies. This may be done in three ways. First, by the excreta of the flies. It has been shown that most germs are not destroyed by passing through a fly's body, but, just as the droppings from a bird that has eaten cedar balls produces an abundant crop of young cedars, so the deposits of a fly will, when deposited in suitable soil, develop a colony of living germs. Second, the crushing of the body of a fly may cause an infection if the fly has had access to infected material, and, third, chiefly by the accumulation of infected material upon the feet of the fly. When a fly has had access to human excreta it may come in contact with the germs of typhoid fever, dysentery or tuberculosis. Where the fly can obtain human sputa it may find the germs of tuberculosis or diphtheria. Upon the fly's feet or within its deposit there may be thousands of these germs. The fly then lights upon food or crawls upon milk pails or in vessels used for drinking purposes. The poison is here deposited and naturally passes into the human body.

Typhoid fever, dysentery, tuberculosis and diphtheria are only a few of the diseases that are known to be carried by flies. The diarrhœas of infants, epidemic sore eyes, erysipelas, cholera and many other diseases are spread in this way. The fly is probably the chief way in which the poison of epidemic diseases is carried from person to person among civilized people. For, be it remembered, human excreta and sputa are not the chance resting place of the fly. He seeks filth wherever it may be found. And whenever a fly appears in a dining room and lights upon food it is more than probable that it has within a few hours past visited a privy or cess pool. The well known case of the flies appearing in the eating tents of the soldiers of the American-Spanish War and crawling over the food with the lime of the latrines upon their feet is no exception to the rule. When you eat food upon which a fly has rested the probability is that you eat human excrement. And if there is a case of typhoid fever or dysentery or tuberculosis in the neighborhood it is not improbable that you take into your stomach the poison of these diseases. This is not theory, but fact. It has been proven wherever the test has been made.

REMEDIAL MEASURES.

The fly is a pest. Comfort, health, decency demand his exclusion and extermination. So long as his breeding places are permitted to exist near the haunts of man it will be necessary to provide measures for his exclusion and for his destruction when he does enter. This may be partly accomplished by screen doors and windows, by fly paper and traps. In addition to this all privies, cess pools, garbage cans and other places where there is filth should be rendered inaccessible to the fly. But all of these precautions combined do not exclude the fly. *The sane and sensible way to rid a community of flies is to destroy their breeding places.* That this can be done with efficiency and with comparative ease is shown elsewhere in this number of the Bulletin.

FIGHTING FLIES

Rev. George W. Lay, Rector of St. Mary's School, Raleigh, and Contributing Editor of The Bulletin.

I hope that everybody now hates flies and wishes to fight them. Let us begin with the house. The best method is to use the little fly-swatter, made of woven wire. This is far more efficient than the newspaper, or other homemade weapon, and will pay for the expense many times over. The ideal way is to have one in each room and, every time you see a fly, swat him. If the house is screened there are few flies, but one lonesome fly can be a great nuisance in the early morning.

Where there are many flies in the house, sticky fly paper is useful, but disgusting. The little packages of fly paper in strips that can be hung up and torn off as flies are caught is much neater and works well, because flies like to light on gas fixtures and other projections. The best and safest fly destroyer is made by mixing some formaldehyde with two or three parts of milk, and placing a little in the bottom of saucers near windows, or even outside on a porch. Put a small piece of bread crust in the center for the flies to light on. Except in considerable quantities this will not injure human beings, and the fly on drinking it falls dead in or near the saucer. If the kitchen is badly infested, practically all the flies will be killed by burning *fresh* pyrethrum powder in the room at night and leaving the room tightly closed for several hours. The only bad effect is the smell, which is no worse than that of anything else which is burned on the stove.

The house should be thoroughly screened with woven wire screening, preferably eighteen meshes to the inch, so as to keep out mosquitoes as well as flies. Doors should have springs so as to shut automatically. Be sure to put window screens on the *outside.* The screen on the inside is frequently opened, and besides, when the lower window sash is raised it is seldom left so as to have the lower strip of the sash match the upper strip of the screen, and even when they do match there is usually a crack which admits flies and other insects. When the fly screen is inside and there is any space allowing a fly to get in, it constitutes a trap which will surely bring into the house all the insects that can reach the outside of the fly screen. *Flies almost always crawl up, not down,* and after reaching the hole as they ascend, will surely go through. If the fly screen is on the outside, the upper strip of the fly screen will match the lower strip of the upper window sash and the inner window sash may be wholly or partially opened without affecting the protection against flies.

Be sure that fireplaces and openings for stovepipes are closed or screened against flies, as they will often find them and enter the house by that means.

Always kill the flies in the house. Do not drive them out, as they will surely come back and bring others. Flies are public spirited and charitable to the hungry wayfaring fly seeking free lunch and shelter.

If the flies are numerous in your neighborhood, and the house is screened, by the following methods you can catch nearly all of them as they try to enter the house. You will find most of them on the outside of the screen door leading to the kitchen. Take a piece of tin or zinc 3 or 4 feet long and an inch wide. Bend this its whole *length* at right angles. Cut a section half an inch deep in the middle of this gutter and bend the piece so as to form an inverted V. (See Fig. 1, page 52.) Fasten this on the outside of the screen door with the apex of the V at or near the top and with the two extremities touching either edge of the screen door. The easiest way to fasten the strip is to punch holes in it and, from the outside, drive tacks through the strip and the wire screen into two narrow wooden strips on the inside. With a pencil, or other sharp instrument, push through the wires just at the apex of this V, separating the wires so as to make a hole large enough to admit a fly. On the inside of the door fasten a fly trap so as to cover this hole. The method of fastening will depend on the make of the trap. In general, a round piece of board with a hole nearly as big as the trap can be fastened on the inside of the door by driving common tacks through the wire screen from the outside. The trap can usually be fastened to the board by three screw eyes which can be turned so as to press on the bottom of the trap and hold it firmly. The trap is removed by turning one or two of the screw eyes partly around. It will be well to fasten the trap to the door by strings, passing through the screw eyes and joining at the top of the trap. At night, when the inner door is closed the trap can be removed, so that the door will not strike it, and it can be replaced in the morning. All the flies that light on the outside of the door will crawl *up,* and guided by the metal strip will arrive at the hole and come through the door, to their great satisfaction, and find themselves in the trap, to their great surprise and chagrin.

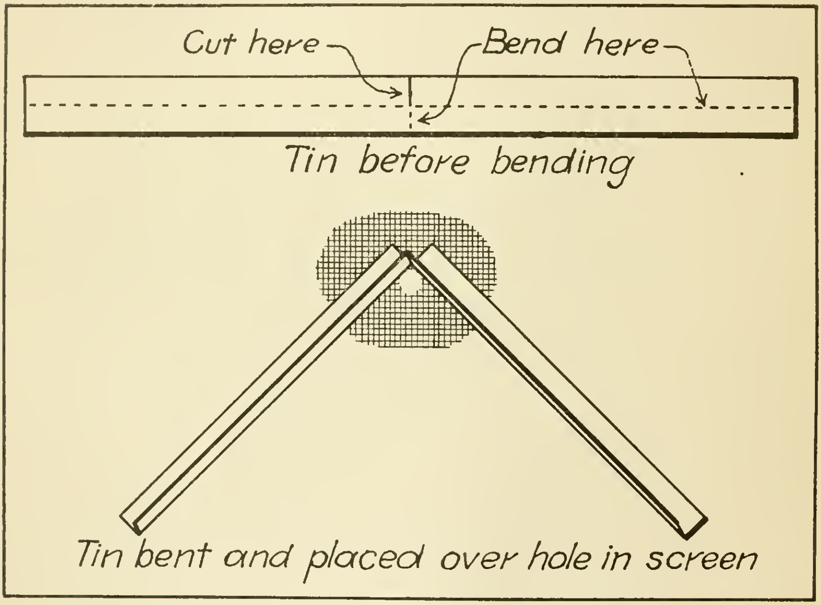

Fig. 1. Upper view—Tin marked for cutting and bending. Lower view—Tin in position on screen door.

Now let us carry the campaign outside the house. Be sure that all garbage and things attractive to flies are cleaned up, and that everything of this sort is in the garbage pail, and be sure that the garbage pail has a tight cover, unless you wish to trap them there.

The most efficient method of controlling flies in and about your house is to catch them at the garbage pail. Flies *can* fly a long distance in search of warmth and food. Their power of endurance is enormous. A fly has been kept on the wing in a room continuously for a whole day, without showing signs of exhaustion, but he is a conservative animal and seldom goes over two or three hundred yards, if he finds convenient enviroment. The garbage pail furnishes the choicest menu, while the warmth and odors from the kitchen attract him indoors for variety in diet, and in bad weather, for warmth and comfort. If you catch all the flies at your garbage can perseveringly, you will have none in the house, or in your neighborhood. One man who used this method in a city infested with flies, ate his meals on the open porch for three days without seeing a single fly.

The method is as follows: You act on the supposition that all flies courteously call at the garbage pail first, as a matter both of convenience and also of etiquette. If there is a metal cover to the can, it will be better to have a wooden cover made, rather than to injure the metal top. This should have a rim that will come down some distance round the can when the top is on. Nail a small strip on the under side of the cover that will strike the top of the can so that a fly can crawl under the rim into the can. Cut a round hole, three or four inches in diameter, in the top of the cover and fasten the fly trap over this hole. If the trap has a wooden bottom, cut out a similar hole in the bottom of the trap. The trap itself, without the wooden bottom, may also be attached by three screweyes as mentioned above. A good cover for the garbage can can be made at home by nailing boards together with cleats at the end on top, making a square cover a little larger than the can. Any kind of dark cloth, or several thicknesses of sacking can be tacked around the edge of the cover so as to hang down some six inches and make it dark underneath.

The fly on first calling at your house will go into the garbage pail to satisfy the ferocity of his appetite, so that he will have plenty of time to buzz, gossip and pry about when he gets into the house. After satisfying his appetite he will make for the light. *All flies dislike the dark.* The rim of the can where he entered will be dark, but the large hole provided will prove inviting and satisfying, and he will soon be in the trap. At stated intervals the trap may be dipped into boiling water, the dead flies may be removed and the trap set again. This method will absolutely prevent flies in the house, especially if it is faithfully followed by all those in your immediate neighborhood.

The above campaign can be conducted at every dwelling house and should be thoroughly carried on by every decent family. The fight against the fly is also sometimes carried further and the effort is made to entrap flies in large quantities in stables, dairies, market houses, and on dumping ground. The labor would be better spent in preventing the breeding of flies, but much good is accomplished by a fly trapping campaign on a large scale, from a spectacular standpoint, because it shows the public that one person can catch bushels of flies in a few weeks. Tarl Chester Bosquet, the inventor of this trap, and the prize winner in Worcester, Mass., last year, a boy of twelve years, using six traps, caught in three weeks, singlehanded, 1,219,066 flies, sufficient to fill three bushels. The large trap is shown in the cut and can be made any size. (See Fig. 2, page 54.) It consists of a framework standing on four legs, covered with woven wire to within five inches of the ground, and with a wooden top.

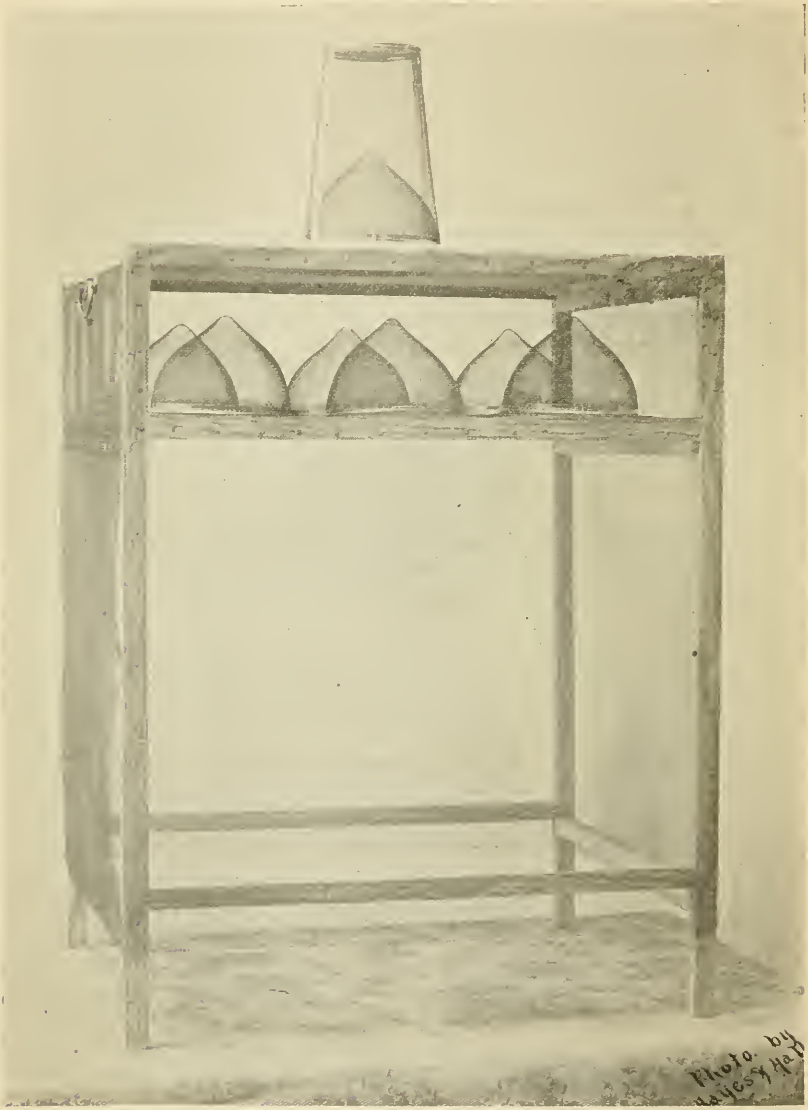

FIG. 2. Large Fly Trap.

A foot from the top, parallel to it, is a partition of wood with holes cut through, and the cone, or lower part of the fly trap, fastened permanently over each hole. Over a hole in the top of the whole trap is placed a complete fly trap. The method of procedure is as follows: the big trap is put over some bait. Fish or melon rind are found particularly attractive, but any kind of garbage will do. When the bait is covered with flies a switch is waved over the bait, and most of the flies will go upwards and will finally go through the cones into the upper part of the trap. Later some dark cloth is put around the whole trap and the flies in seeking the light will go into the small fly trap on top, from which they can be taken and killed with boiling water, or by putting the trap into a closed box containing burning sulphur. Flies may be caught in this contrivance by simply leaving it over the bait. In active contests, the trappers would have two or more traps, and go from one to the other, doing the trapping at some dumping place where garbage and refuse is scattered about, or near stables.

"The best way to kill a snake is to smash the egg," and the best way to kill flies is to stop breeding them. On an isolated country place this can be controlled by the individual, but in villages, cities and towns there must be coöperation on the part of all, and the strict enforcement of well devised laws. Flies breed mostly in horse manure. All manure should be taken out twice a week, and spread on the ground, and no accumulation of manure or filth of any kind where they may breed should be permitted.

Many methods have been tried for killing the eggs and larvæ of flies in a manure heap. All these methods are too expensive and too injurious to the fertilizing qualities of the manure to be practically desirable. The writer believes that preventive methods are best. Besides hauling manure out on a field twice a week, it would be found useful to sprinkle a 5 per cent solution of carbolic acid on the manure heap, and about the stable, daily. This may be applied with a watering pot, or with a broom dipped in a bucket of the dilute carbolic acid. This method does not kill flies, but prevents their laying eggs, as it is very disagreeable to them.

Another useful method is to keep all manure in a closely screened room or pit. If the flies have already laid their eggs in the manure, they will certainly hatch out, and as certainly find their way to the open air. It is possible, however, to avail oneself of this fact and catch all the flies by using the contrivance recommended above for the kitchen door, remembering to put the strip on the inside and the trap on the outside, so as to catch them going out instead of coming in.

It is also helpful to put the manure in a barrel, ramming it down tightly and keeping a cover on the barrel. Carbolic acid should be sprinkled on the manure each time.

The above article is written in the way in which it will appeal to most people, beginning at the house and going on down to the stables. If we really wish to eliminate the fly, the logical and effective method is in exactly the opposite order. We should begin at the stable, which is the source of supply, and breed no flies. If we did this thoroughly, all the other methods would be useless, as there would be no flies to kill or to keep out of our houses with fly screens.

THE BABY

By courtesy Illinois State Board of Health.

FIG. 3. "A babe in a house is a well-spring of pleasure."

THE BABY'S DANGER AS SHOWN BY THE UNITED STATES CENSUS.

Two and a half million babies are born every year in the United States. One-half of them, 1,250,000, die before they reach their twenty-third year; one fourth of them, 600,000, never reach their fifth birthday; one-eighth of them, 300,000, die within the first year of life.

One-third of all deaths occur under the fifth year of age; one-fifth of all deaths occur in the first year of life; the chances of a newborn child living a week are less than those of a man of ninety; of living a year, less than those of a man of four score.

MODIFYING FACTORS.

There are two powerful modifying factors in a baby's fight for life: The first is that it shall not be denied its birthright—its mother's breast—and placed upon the bottle; the second factor is season—the warm weather of June, July, August, and September causing the death rate of young children to run extremely high. The chart (Fig. 5, page 58) illustrates the effect of season and the source of food supply.

The chart shows fifty-two vertical spaces, each representing one of the fifty-two weeks of the year; the one hundred and seventy-five horizontal spaces represent the possible number of deaths of young children from diarrheal diseases *per* 100,000 of the population; the number of *black* columns represent the number of deaths weekly, among breast fed babies. The total height of the gray column is ten times the total height of the black column, showing that *ten* times as many bottle fed babies succumb to these fatal diarrhœas as breast fed babies. When a mother, for necessity or convenience, takes away the natural food of the child, her own breast, and yields her primal and divinely ordained function to a cow, she gives her tender offspring but one-tenth the chance it had to live. The chart further shows that the solid black columns, although a bit higher in the midsummer months, are fairly uniform in their height for the year; but the gray columns rise very high in the hot weeks, reaching a height of 158 deaths per 100,000 of the population in the thirtieth week. *This goes to show that season, hot weather in itself, has little to*

THE BABY'S DANGER.

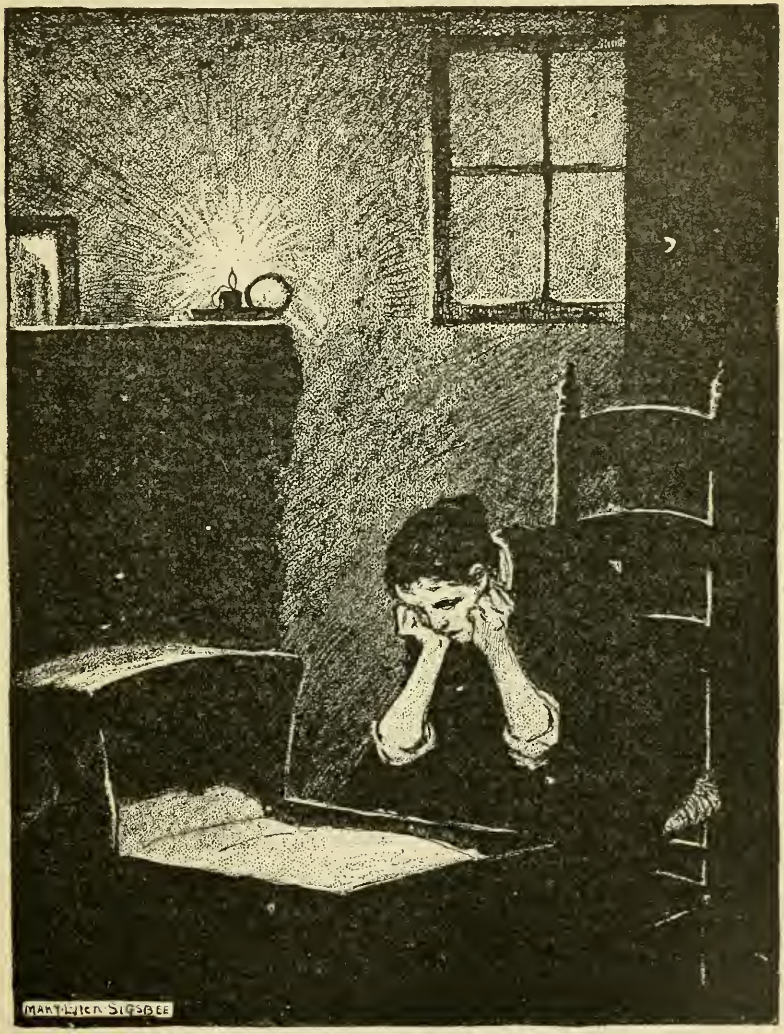

FIG. 4. "Weep no more lady, weep no more; thy sorrow is in vain."

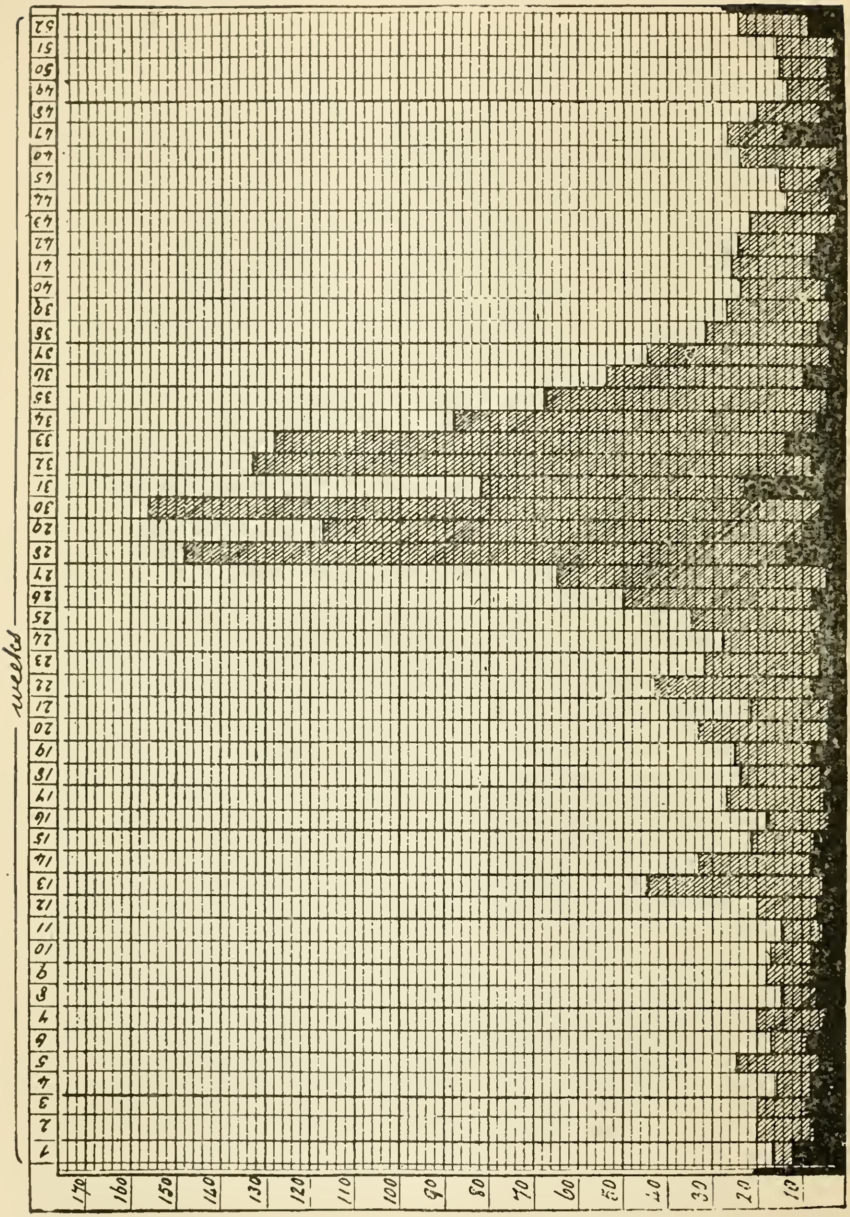

Fig. 5. Diagram showing relation between deaths of breastfed and bottlefed babies. Black spaces represent deaths among breastfed babies; shaded columns represent deaths among bottlefed babies per 100,000.

do with the death rate of infants from diarrhœas, as breast fed children show but an inappreciable increased death rate, while bottle fed children show a greatly increased death rate during the hot months.

Now, the *two* factors associated with high death rates among young children, bottle feeding and the hot season, both operate to bring about *one* condition, namely, a milk with a high germ or bacterial content.

The milk in the udder of a healthy cow or the breast of a healthy woman contains no germs. When a child sucks its nourishment from its mother's breast it gets a practically sterile or germ-free food.

In the process of milking and handling of the milk it is absolutely impossible to prevent the entrance of a number of germs. The cleaner the cow, particularly her udder, flanks and tail, the cleaner the milkman and vessels, the fewer the number of germs that will gain entrance to the milk; with a dirty cow, dirty milkman, and dirty utensils the larger will be the number of germs entering the milk. The number of germs in a given amount of milk, six, twelve, or twenty-four hours after milking will vary with the number of germs that gained entrance to the milk at the time of milking and the temperature of the milk since milking. *The temperature at which the milk has been kept is the more important of these two conditions.* Germs will not reproduce themselves, multiply, in ice or in anything near the freezing point. Just as the temperature of a germ-containing mixture or substance is reduced, so does the multiplication of germs decrease. On the other hand, just as the temperature of a germ-containing substance is increased to body temperature, 98.5°F., so much more rapidly do the germs multiply.

With these universally accepted scientific facts before us, one will easily understand that milk in the summer time will have a much higher germ content than milk in the winter, and that the highest germ content will coincide with the hottest months. The dirtier the milking, the greater the time elapsing since milking, and the higher the temperature at which the milk has been kept, the larger will its bacterial content be; on the other hand cleanliness, freshness, and coolness mean a low bacterial content. *From a sanitary viewpoint clean milk is milk with a comparatively low germ content; dirty milk is milk with high germ content.*

THE BABY'S SAFETY.

"The question whether a child shall be strong and robust or a weakling is often decided by its food during the first three months.

"The problem is not simply to save the child's life during the perilous first year, but to adopt those means which shall tend to the healthy and normal growth of the child."—Dr. L. Emmett Holt, Professor of Diseases of Children, Columbia University.

"By universal consent, however, milk containing excessive numbers of bacteria is unsuitable for infant feeding. The tender mucous membrane of infants is very susceptible to bacteria and their products, and a large proportion of summer complaints of infants has been traced to the use of bacteria-laden milk. As we grow older it seems that the gastro-intestinal mucous membrane becomes comparatively immune, or resistant to bacterial action." * * *

"There can be no doubt that there is a direct relation between the bacteria and their products in milk and the bowel complaints of children."—M. J. Rosenau, formerly Director of the United States Laboratory of Hygiene, and at present Professor of Preventive Medicine, Harvard University.

As Dependent Upon Clean Milk.

The vital association of milk supply and infantile death rate is well shown by the decline in death rates among children following improvements in the sanitary condition of the milk supply.

The following is taken from *Charities,* August 5, 1905, and the results shown in the table were accomplished at a cost of only $1,000 a year.

DEATHS IN CHILDREN UNDER ONE YEAR AND FROM ONE TO FIVE YEARS FOR TWO TEN YEARS' PERIODS, ONE BEFORE AND THE OTHER AFTER SYSTEMATIC MILK WORK WAS BEGUN AT ROCHESTER, N. Y.

1887—1896.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Under 1	319	307	303	316	258	280	1010	808	554	342	234	244	4975
1 to 5	233	214	201	210	192	163	212	267	185	181	200	218	2476
	552	521	504	526	450	443	1222	1075	739	523	434	462	7451

1897—1906.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Under 1	210	265	265	283	218	215	413	478	424	270	194	196	3421
1 to 5	178	134	142	160	128	117	127	125	109	112	99	113	1544
	388	399	407	443	346	322	540	603	533	382	293	309	4965

It will be seen by an examination of the table that 2,486 lives were saved during the ten years, or 248 lives a year. The cost of this work was $1,000 a year, or $4 for each baby's life saved. Any one interested in the method of work by which these results were accomplished should write the American Association for the Study and Prevention of Infant Mortality, Medical and Chirurgical Faculty Building, Baltimore, Md., for the pamphlet entitled, "But a Thousand a Year."

Figure 6, page 61, represents the decline in infantile death rate in the City of Washington after the enactment of a comprehensive milk regulating ordinance in 1895. The average infantile death rate per 100,000 of the population for the five years preceding the enactment of this ordinance was 175; for the five years after the enactment of the ordinance 109, and in 1906, the last year for which we can find a record, it was only 97.

Another series of facts illustrating the use of milk with low germ content on infant mortality is the wholesale use of Pasteurized milk, or milk that has been heated, shortly after being drawn, to 145°F. for thirty minutes. The heat kills most of the germs and renders even a dirty milk comparatively harmless.

Mr. Nathan Straus for eighteen years has operated a large number of milk depots in New York City, particularly in the tenement districts. Within that time the infantile mortality has fallen from 96.5 to 49.6 per 1,000 infants, which in absolute figures for the population supplied means the saving of 12,000 lives each year.

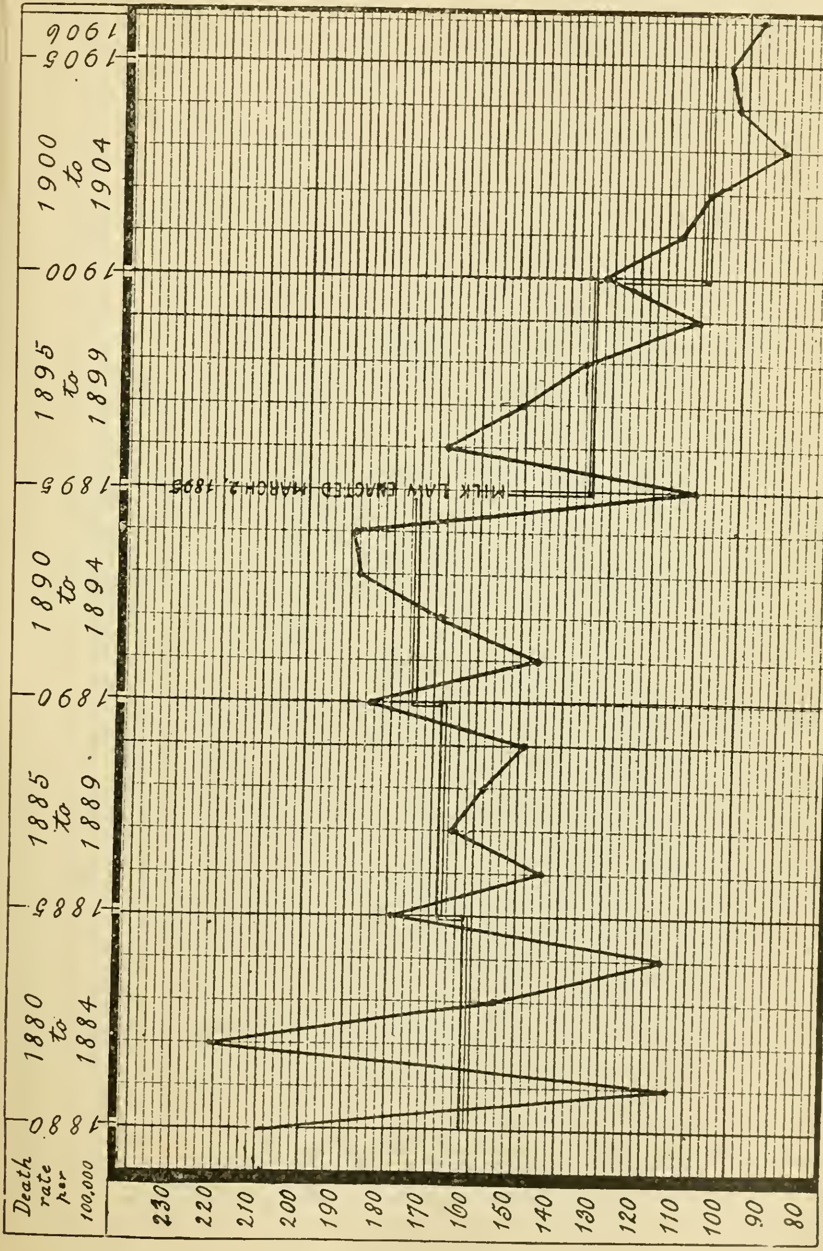

FIG. 6. Chart showing decrease in infantile death rate after enactment of milk regulating ordinance. Straight horizontal lines show five year averages, heavy black lines show yearly variations.

On Randall's Island the City of New York takes care of dependent infants, those without father or mother—the city's children. The following table shows the effects of Pasteurizing their milk on the death rate of these children:

BEFORE PASTEURIZING.

	Children Treated	Number of Deaths	Percentage
1895	1,216	511	42.02
1896	1,212	474	39.11
1897	1,181	524	44.36
Total	3,609	1,509	41.81

AFTER PASTEURIZING.

	Children Treated	Number of Deaths	Percentage
1898	1,284	255	19.80
1899	1,097	269	24.52
1900	1,084	300	27.68
1901	1,028	186	18.09
1902	820	181	22.07
1903	542	101	18.63
1904	345	57	16.52
Total	6,200	1,349	21.75

Had the death rate of 1895, 1896, and 1897 obtained for the seven years, 1898-1904, the number of deaths would have been 2,592 instead of 1,349—a saving of 1,243 children.

During three years' operations of milk depots in Liverpool 4,453 infants were supplied with milk. Their death rate was 78 per 1,000. The death rate among the same class of population of Liverpool, not supplied with Pasteurized milk, for the same period of time, was 167 per 1,000.

In the town of St. Helens, England, the children supplied from the milk depot had a death rate of 98; those not supplied from the milk depot had a death rate of 171.

As a result of a system of Pasteurization in Vienna the proportion of deaths between breast fed and bottle fed infants has been changed from 1-20 to 1-8.

Sandhausen, Germany, cut to less than half its infantile death rate with no other change than Pasteurization of the milk.

As Dependent Upon Maternal Intelligence.

Errors in the *quantity* as well as in the *quality* of milk used for feeding babies may be responsible for the baby's death. Maternal ignorance plays an important role if not *the* important role in the high death rates of children.

We do not wish to be understood as unduly criticizing our good women.

The college woman is just as well equipped with facts as the college man. They are both equally deficient in that apparently unimportant branch of knowledge which relates to the why of woman's being—maternal knowledge. Her uneducated sister differs widely from her in knowledge of books, but there is but slight difference in their ability to care for their babies. All her facts are unavailable when it comes to placing herself between her baby and that demon of infancy, colic; foreign languages she understands, but not the language of her child, whose unintelligible appeal for relief is answered only by Mother Nature with the relief that comes with the sleep of exhaustion.

As to what can be accomplished by education we cite the following from "National Vitality," by Irving Fisher and Dr. Charles V. Chapin, Providence, R. I., respectively:

"The achievement of Huddersfield, England, is especially noteworthy. The average number of deaths of infants for ten years has been 310. By a systematic education of mothers the number was in 1907 reduced to 212. The cost of saving these 98 lives was about $2,000."

Dr. Charles V. Chapin, of Providence, R. I., says:

"We attempted for two years to distribute clean milk to the babies of the poor, but this year we decided that the money could be better spent on trained nurses. Thus far we have expended about $900 for this purpose. Two hundred and thirty-five sick children, of whom very many were very sick, have been cared for. Of these only 20 have died. From a study of our statistics I should judge that the reduction in infant mortality effected by the nurses was at least 25 deaths, and it may be that as many as 40 lives were saved."

HOW TO PROTECT YOUR BABY.

Do Not Poison Him; Give Him Clean Milk.

BREAST MILK.

Clean milk is breast milk, the cleanest obtainable. Taken directly from the maternal breast into the stomach of the infant, the natural food of infancy is not exposed to anything that might contaminate or pollute it. We repeat that it is so clean as compared with bottle milk that only one-tenth as many breast fed babies die as bottle fed babies; and that babies on the breast show but a slightly higher death rate during the hot months over the cold months, whereas the warm months, stimulating the multiplication of germs and their activities, increases the death rate of bottle fed children 15 to 20 times their death rate during cold months. This last fact proves that it is not the hot weather in itself that kills the babies, for breast fed babies do not die excessively during the summer months; it also proves that the difference in the *composition* of breast milk and bottle milk plays a very minor role in the high summer death rate, *because* in the winter there is little difference in the death rate of breast fed and bottle fed babies. Ponder this sentence well.

Nurse your baby. To substitute the bottle for the breast decreases your baby's chance to live *ten* times.

But remember, good bottle feeding is better than poor breast feeding. Insufficient supply of milk, deficient quality of milk, tuberculosis, and other conditions affecting the mother may necessitate the adoption of bottle feeding. However, the change from breast to bottle should never be made without the advice of a competent physician.

BOTTLE FEEDING.

In adopting bottle feeding the first concern is to obtain a clean milk.

If you keep your own cow, as most of the families in North Carolina do, this matter is largely under your own control. See that the cow is clean; that her flanks are not caked with manure; that her tail is not so long as to be switched into the milk pail; see that her stable is clean in order that the cow may be clean. Before milking wash her udder and have it dried with a soft cloth. The milk pail should have a covered top with an opening of three or four inches, like the pail shown in Figure 7, page 64. The milk pail must be scrupulously clean and the milker should have clean, dry hands. As soon as the milking is completed the baby's portion should be cooled as rapidly as convenient and kept cool. Germs do not grow in cool milk.

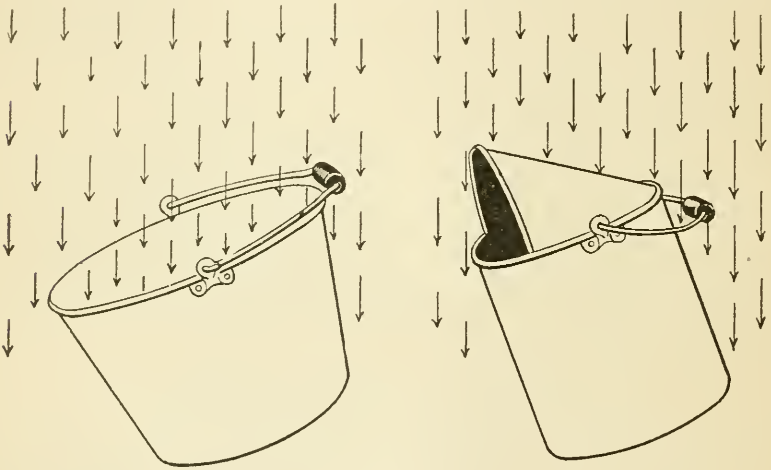

FIG. 7.

If you do not own a cow, buy your milk from some one who observes the sanitary details set forth in the preceding paragraph. You should certainly know something, through your friends or by personal investigation, about the condition under which your baby's food is produced.

Any one living in a town or city of eight thousand or more population should be able to obtain clean milk. It is the city's business to see that dairymen sell *clean* milk, not baby poison, to the public.

The city can do this by instituting a system of dairy inspection and milk analysis under a graduate veterinarian at a cost of from $1,000 to $1,500. Most of the revenue for this service is obtained from the license fees that the dairymen are required to pay in order to sell milk in the city. Of course, it adds to the expense of the milk and makes a quart of milk cost the consumer one or two cents more, but it must be remembered that there is great difference in the value of milk that is food and milk that is a baby poison.

The dairy inspector visits each dairy once or twice a month and scores each dairy on a card similar to the following one:

[United States Department of Agriculture, Bureau of Animal Industry, Dairy Division.]

Sanitary inspection of dairies.

Owner or lessee of farm----------
Town---------- State----------
Total No. of cows-------- No. milking---------- Quarts of milk produced daily----------
Is product sold at wholesale or retail?----------
If shipped to dealer give name and address----------
Permit No.------ Date of inspection----------, 19

	Score		Remarks
	Perfect	Allowed	
Cows			
Condition (2)	10		
Health (8)			
Cleanliness	5		
Water supply	5–20		
Stables			
Construction	5		
Cleanliness	5		
Light	5		
Ventilation (4)	7		
Cubic space per cow (3)			
Removal of manure (2)	3-25		
Stable yard (1)			
Milk House			
Construction (2)	5		
Equipment (3)			
Cleanliness	5		
Care and cleanliness of utensils	5		
Water supply (Temp------F.)	5–20		
Milkers and milking			
Health of attendants	5		
Cleanliness of milking	10–15		
Handling the milk			
Prompt and efficient cooling (Temperature of milk------F.)	10		
Storing at a low temperature	5		
Protection during transportation	5–20		
Total score	100		

Sanitary conditions are—Excellent---------- Good---------- Fair---------- Poor----------
Suggestions by inspector----------
Signed----------
Inspector

At the end of every month the grading in figures, say 95, 80, 75, 60, or 40, of each dairy with the results of a bacteriological examination of the milk sold by the dairy is published in a health bulletin or one of the city papers and distributed among the people.

By this method the dairyman who takes pains to produce sanitary milk gets credit for his work. Every person buying milk can know what he is getting. If under such a municipal system of milk regulation a mother buys dirty milk and poisons and kills her baby, the crime is chargeable to either her ignorance, her indifference, or her poverty.

HOW LONG TO FEED MILK.

Until the baby has cut at least four teeth and is at least eight months old he should have no other diet except milk. In the ninth and tenth months gruels, strained cereals, and animal broth with but a small amount of grease in it may be given.

With a supply of *clean* milk for the baby, either breast milk or cow's milk, the next question that presents itself is

HOW MUCH AND WHEN TO FEED THE BABY.

If breast feeding is possible the baby nurses from five to fifteen minutes during each feeding. The baby should not be allowed to sleep with the nipple in his mouth. Pliable infancy is ten-fold more sensitive to those changes which produce disease than adults. Irregularity of meals will produce digestive disturbances in an adult. Irregularity in the feeding of infants is almost certain to bring on digestive disturbances. Feeding the baby, then, at stated intervals should be strictly adhered to.

The following table from "Diseases of Infancy and Childhood," by Dr. L. Emmett Holt, will indicate the proper intervals for nursing or feeding, and the proper amount to give when the child is bottle fed:

TABLE SHOWING QUANTITY AND FREQUENCY OF FEEDING FOR BABIES OF DIFFERENT AGES.

Age	Interval Between Meals by Day	Night Feedings 10 P. M. to 7 A. M.	No. of Feedings, 24 Hours	Quantity for One Feeding		Quantity for 24 Hours	
	Hours			Ounces	Grammes	Ounces	Grammes
2nd to 7th day	2	2	10	1 —1½	30— 45	10—15	310— 460
2nd to 3rd weeks	2	2	10	1½—3½	45—110	15—35	460—1,090
4th and 5th weeks	2	1	10	2½—3½	75—110	25—35	775—1,090
5 weeks to 2 months	2½	1	8	3 —5	90—155	24—40	745—1,250
2 months to 5 months	3	1	7	4 —6	125—185	28—42	870—1.300
5 to 9 months	3	0	6	5 —7½	150—235	30—45	930—1,400
9 to 12 months	4	0	5	7 —9	220—280	35—45	1,090—1,400

After feeding wash off the breast with a weak solution of boric acid, or if using the bottle wash out thoroughly with cold water, then with hot soap suds and brush, and after removing all soap place bottle and nipple in weak solution of boric acid. *Never save the milk left in the bottle by the baby.*

The right kind of bottle is one with a rubber nipple that fits over the top, or any bottle that can be easily cleaned. The kind of bottle *not to use* is one with a rubber tube. You can't wash out a rubber tube, therefore, don't use it.

DIFFERENCE IN COW'S MILK AND MOTHER'S MILK.

There are five food elements in milk: Fat, sugar, proteid (or albumen), salts and water. These food elements occur in different proportion in human and cow milk as shown by the following table, copied from "Diseases of Infancy and Childhood," by Dr. L. Emmett Holt:

TABLE SHOWING COMPOSITION OF WOMAN'S MILK AND COW'S MILK.

	Woman's Milk, Average, Per Cent.	Cow's Milk, Average, Per Cent.
Fat	4.00	4.00
Sugar	7.00	4.50
Proteids	1.50	3.50
Salts	0.20	0.75
Water	87.30	87.25
Total	100.00	100.00

A few babies might take cow's milk in its natural state without digestive disturbance, but such a baby would be a rare exception to the rule. For most babies, cow's milk must be modified so as to resemble in its constitution mother's milk. This is done in a general way by adding water to the cow's milk which reduces the proteids or albumen to the amount contained in mother's milk. But as the reader will see by a glance at the table, in adding water to get our proteids in proper proportion, we produce a *deficient* fat and sugar content. We, therefore, must add cream and sugar to bring up the water-milk mixture to that of mother's milk. And as cow's milk is more acid than human milk we must add about 1 oz. of lime water to every 20 oz. of the milk to adjust acidity.

As the baby grows and its digestive powers become stronger the mother's milk changes its composition, and, therefore, in modifying cow's milk for the baby we must use *different* modifications at different periods of the infant's life. Again, the milk has to be remodified on the appearance of certain symptoms in the infant. For example: Colic usually means too much proteid, that is, too much skimmed milk; diarrhœa, too much fat, that is, cream; flatulency, passage of lot of gas, too much sugar or too much fat, usually too much fat, as sugar rarely gives trouble; constipation, too much curd or proteid, etc.

Now, all this is very easy to say, but in actual practice the adjustment of cow's milk to the digestion of the individual infant (and every infant is in many respects a law unto itself), is usually a matter of some difficulty that necessitates the expert advice and assistance of a physician. We, therefore, recommend that in the beginning, and when changes in the composition of the milk mixture is indicated by age, growth, failure to gain weight regularly, colic, diarrhœa, etc., that the assistance of the physician be called in.

HOW TO MODIFY COW'S MILK.

The most practical and easiest way to modify milk is to purchase the "Materna Measure" shown in the cut. This measure holds 16 oz., is six sided and on each of the six sides is graduated so as to indicate the proper amount of milk-sugar, lime water, cream and skimmed milk needed for the baby at six different ages of infancy. This measure can be obtained from your druggist.

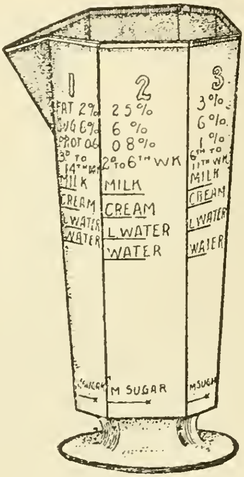

Fig. 8. Materna Measure.

INGREDIENTS.

Sugar. Unless your druggist can sell you milk-sugar that he can assure you is pure, it will be best to use cane-sugar, that is, ordinary granulated sugar, which is nearly always pure. If cane or granulated sugar is used, only use half the quantity of sugar indicated on the measure.

Water. The water must be fresh, preferably water that has been boiled, but that has not stood over six hours.

Barley Water. Barley water is often used in diluting milk for infant feeding and tends to make the curds of milk more easily digestible. (Barley water is made as follows: To 2 tablespoonfuls of barley meal add enough of a quart of cold water to make a thin paste and then add the remainder of the quart of water; stir and boil 15 to 20 minutes. Barley flour is much better than pearl barley and requires much less cooking. Pearl barley should be boiled for 2 to 3 hours. Barley water should not be kept from day to day, but should be made fresh every morning.)

Milk. By milk we mean *skimmed* milk. The milk should be as fresh as possible to allow time for the cream to rise. Practically all the cream will rise after the milk has been cooled to the temperature of average well or spring water and allowed to remain undisturbed six hours.

Cream. By cream as here used we mean *the first part* of the top of the milk that has been allowed to stand as described in the following paragraph.

Lime Water. Can be obtained from any druggist.

WHEN AND HOW TO PREPARE AND KEEP THE DAY'S FOOD.

This is best done early in the morning and the modified milk for the entire twenty-four hours can be prepared at one time, *if* the modified milk can be kept cool. For amount to prepare see the table on page 66 of this Bulletin. *Just as the temperature of the milk is raised, so much faster do the germs of decomposition multiply and make the food a poison.* Unless the milk can be kept cool at the temperature of the water *in the well,* then it is best to make only the days food from the milk that was drawn the preceding evening and that has stood during the night for the cream to rise, and the night's food from the milk drawn in the morning that has stood during the day. After making the mixture it should be divided into as many bottles as will be needed for the amount made up, and these placed in a *cool* place, on ice when it can be afforded. If the necessary ten feeding bottles can not be afforded, then the mother must be sure to thoroughly shake the mixture every time she takes out a portion for feeding, else the fat will rise to the top and she will get too much fat for one feeding and too little for another.

Before giving the bottle of milk to the infant the milk should be warmed to about blood temperature. In giving cold milk to the child its digestion will frequently be upset and colic follow.

When the Food Agrees.

The best proof will be a gain in weight. A steady gain is better than fluctuating gain, even though the total gain is greater. The average baby at birth weighs seven pounds. He loses a few ounces during his first three days of life and should regain his birth weight on his tenth day. The healthy baby doubles his birth weight at the end of his fourth month, and nearly trebles his birth weight at the completion of his first year. It will, therefore, be seen that the child grows fastest during the first six months of life, and a little slower during the next six months. For the first six months he should make a weekly gain of 4 oz.; for the next six months he should gain 3 oz. a week. The baby should be weighed weekly for the first six months of life, and semi-weekly for the next six months.

When the baby is put on modified milk at birth it may not start off as rapidly in making its gains, or, if it is found necessary to interrupt breast feeding and substitute the bottle, the regular gains may be interfered with and even a slight loss of weight may follow.

When the Food Does Not Agree.

The baby will fail to gain in weight; the weight will be stationary or a loss may occur; constipation, colic, flatulency, loose stools, or diarrhœa may be present.

When any of these conditions are present do not wait too long to call the doctor. Remember the stitch in time.

Infant Foods.

"It is not possible, nor even desirable, for a physician to know all about the infant foods with which the market is flooded. He should, however, know at least that they are not perfect substitutes for breast milk, that as permanent foods they are greatly inferior to properly modified cow's milk, and that as often used by the laity, and even by the medical profession, they are capable of doing and have done much positive harm. Rickets and scurvy have so frequently followed their prolonged use, especially when given without the addition of fresh milk, that there can be no escaping the conclusion that they were the active cause. The almost unanimous verdict of intelligent physicians is against their use as permanent foods. On the other hand, there are times when some of these preparations may be of considerable value, but chiefly for temporary use in pathological conditions. Here they are to be prescribed like drugs, but only with a very definite knowledge of exactly what they do and what they do not contain." L. Emmett Holt.

The difference between mother's milk, cow's milk, condensed milk, and a manufactured food is shown in the following chart:

CHART SHOWING COMPOSITION OF VARIOUS MILKS.

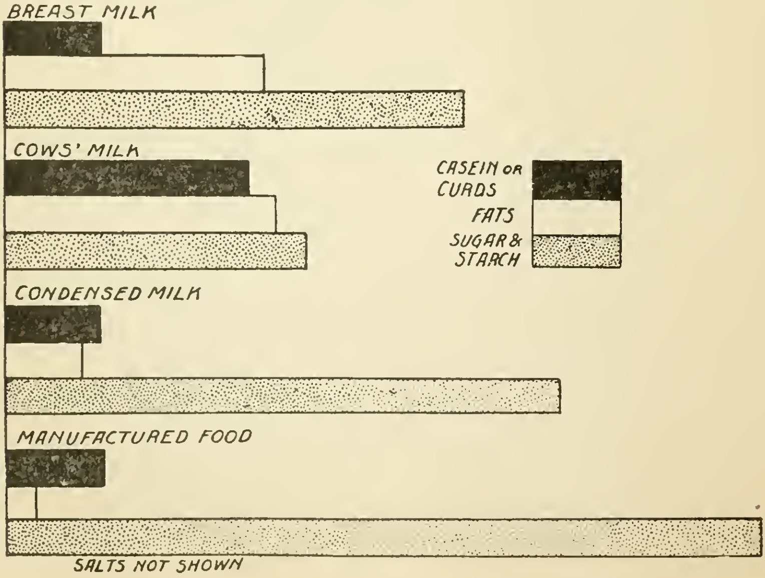

FIG. 9.

WATER.

So long as the baby is getting his milk diet regularly during his first six months no water is needed. If, however, his diet should be decreased in quantity or withdrawn almost entirely on account of sickness, do not forget that he will *suffer* from thirst just as a grown person would, even if he can't describe intelligibly his suffering. Give him water under these circumstances. The water should not be cold, almost tepid.

WEANING.

Babies should be weaned at about their tenth month, unless this age is reached in the hot summer months, when weaning should be postponed until the cooler weather of fall. As the baby is taken off of the breast a diet of clean cow's milk, broths with little grease, and gruels should be gradually substituted. Later, cereals like cream of wheat and strained oat meal, and soft boiled eggs should be added. As the baby gets well started in his second year minced chicken, mutton, and beef, well mashed Irish potatoes, baked apples, and boiled custard may be added.

Controversy Between the Buncombe County Medical Society and the State Board of Health in Regard to the Management of Smallpox Without Quarantine

ASHEVILLE, N. C., Dec. 5, 1911.

DR. W. S. RANKIN, *Secretary State Board of Health, Raleigh, N. C.*

DEAR DOCTOR:—At the last meeting of our Society a resolution was passed entering a vigorous protest against the State Board of Health for the non-quarantine regulations in connection with smallpox, recently put into effect in our county.

Very truly yours,
GAILLARD S. TENNENT,
Secretary the Buncombe County Medical Society.

RALEIGH, N. C., Dec. 11, 1911.

DR. GAILLARD S. TENNENT, *Asheville, N. C.*

DEAR DOCTOR:—I have your favor of December 5th, regarding the position taken by the Buncombe County Medical Society on the question of quarantine rules and regulations. Although Dr. Rankin is at present attending the meeting of the American Public Health Association at Havana, I shall be glad to refer your letter to him upon his return.

Respectfully yours,
WARREN H. BOOKER,
Assistant to the Secretary.

RALEIGH, N. C., December 16, 1911.

DR. GAILLARD S. TENNENT,
Secretary Buncombe County Medical Society, Asheville, N. C.

DEAR DOCTOR:—I have your letter of December 5th, notifying me of the resolution passed by the Buncombe County Medical Society, protesting against the non-quarantine regulation of smallpox adopted by the State Board of Health, which you say has recently been put into effect in your county. There appears to be some misunderstanding on the part of your Medical Society of the law regarding the control of smallpox. I beg to call the attention of the society to the fact that section 9, chapter 62, Public Laws of 1911, permits any county to make such rules and regulations to protect its health as they deem wise. As you very well know, most progressive communities pass ordinances for the protection of their health in addition to the State laws. Section 9, chapter 62, Public Health Laws of 1911, gives your county board of health authority to quarantine smallpox if they desire, or to pass any other law relating to county health, provided such local law does not conflict with the State law. The State Board of Health is perfectly willing for any community to quarantine smallpox that desires to do so. We do not believe in it, and our views on this matter have been expressed time and again, and it is not necessary at this time to reiterate the reasons for our position.

I shall be very glad to have an article of from two to three thousand words from your society, setting forth its views in regard to the control of smallpox to publish in the Bulletin. We can in that way thresh this matter out in public and give the people of the State the advantage of hearing both sides of the question, leaving them to take their choice of quarantine or no quarantine.

In closing, I desire again to express the deep appreciation of those that I represent for the exceptional public spirited interest and activity of your society in the problem of public health. You are doing not only a great service for your county, but by your splendid example your society is acting as a stimulus to other county medical societies and civic organizations.

With highest esteem, I am Sincerely yours,

W. S. Rankin,
Secretary.

Asheville, N. C., April 4, 1912.

Dr. W. S. Rankin, *Secretary, Raleigh, N. C.*

Dear Doctor:—The enclosed is a copy of the report of our Committee on Public Health and Legislation, adopted at the last meeting of our society.

Yours truly, Gaillard S. Tennent.
Secretary-Treasurer.

Raleigh, N. C., April 6, 1912.

Dr. Gaillard S. Tennent, *Secretary Buncombe County Medical Society, Asheville, N. C.*

Dear Doctor Tennent:—I beg to acknowledge the receipt of report on the method of handling smallpox in North Carolina, adopted by the Buncombe County Medical Society at its last meeting.

Very truly yours, W. S. Rankin.
Secretary.

REPORT OF COMMITTEE ON LAWS RELATING TO CONTROL OF SMALLPOX.

Upon investigation, this committee finds that the law of 1911 relating to smallpox practically repeals the previous or 1905 law.

Vaccination under State laws is no longer compulsory, but the authorities of any town, city, or county do have authority to require children attending public schools to present a certificate of immunity from smallpox, either through recent vaccination or previous attack of the disease

The State Board of Health further interpret the law to allow quarantine to towns or counties desiring it, but if quarantine is not desired, they then recommend no quarantine and say, "You can protect yourself through vaccination; be vaccinated or take the consequences."

This committee holds that under the State law there are the following defects:

(1) That the present law is deficient, as it does not notify the public promptly.

(2) Does not quarantine or even restrain infected cases.

(3) Does not compel the exposed to become vaccinated.

(4) Gives no protection to the innocent babe.

(5) Gives no protection to the minor who has not reached the age of discretion.

(6) Does not compel the vaccination of children attending public schools, nor does it allow the enforcement of vaccination in private schools.

These defects are answered as follows: The time elapsing between the notification to the State Board of Health and the instructions to the officer in charge, three to five days, is considered as prompt as is necessary and almost as prompt as possible.

The State Board of Health claim that penning up the smallpox victim discourages vaccination by reason of the assumed security of quarantine. They further claim that the scare of smallpox would compel those exposed to be vaccinated. It would also by fear of the disease compel the vaccination of infants and minors. They seem to be greatly in favor of enforcing the section of the law, compelling school children to be vaccinated. They furthermore favor compulsory vaccination in North Carolina, but hold that it is impracticable under present conditions.

Dr. H. M. Bracken, Secretary of the State Board of Health of Minnesota, says, "We need a good law requiring vaccination of all children"; and again that he is "a thorough believer in a compulsory vaccination law, provided it can be enforced."

Dr. W. C. Woodward, Health Officer of the District of Columbia, says: "I am perfectly willing to go on record as saying that in my judgment purely voluntary vaccination, without compulsory isolation and disinfection, is insufficient to prevent the spread of the disease, and that compulsory isolation of all patients suffering from smallpox and of all persons exposed to it and liable soon to develop the disease is an expensive procedure in an unvaccinated community.

"However little sympathy one may have with the same well educated adult who having an opportunity to protect himself against smallpox by vaccination refuses to do so, yet one can not but sympathize with the infants and children who are incapable of acting for themselves with respect to the matter, and to a certain extent sympathize with the ignorant adult. Under a system of purely voluntary vaccination, minus compulsory isolation and disinfection, I should fear that smallpox would become a disease of childhood, like measles and whooping cough, just as it was in pre-vaccination days."

Dr. Samuel G. Dixon, Commissioner of Department of Health of Pennsylvania, states: "If the government gives up trying to protect the ignorant by not having any law to control smallpox and leaves it to every individual to protect himself or herself by taking advantage of vaccination, there of course would exist a freedom according to the definition of the savage. Such a condition, however, would paralyze business and put the government to a great expense of caring for the sick and entail the loss of many of her most useful citizens. Why do all civilized countries acknowledge the necessity of compulsory vaccination in their armies, navies, and not for the farmers, manufacturers, etc.?"

This committee, therefore, basing its own opinion largely on the good results obtained in Buncombe County under the law of 1905, with due consideration to the position held by those who favor the new law and especially no quarantine, declare that we are strongly in favor of compulsory vaccination because we believe it can be enforced, and are also strongly in favor of quarantine because we believe it reduces at least to some extent the number of people infected and gives a security from the disease and does not inhibit vaccination.

We do not believe in saying "Be vaccinated or take the consequences."

We might as well argue, keep off the railroad track or be killed.

We favor keeping people by law off the railroad track, and we favor compelling people by law to be vaccinated, by might, if you please, rather than by fear. To teach through fear or compel through fear is certainly not a wholesome principle. Quarantine, while an uncertain protection, after all is a protection to some extent.

People may be divided into four classes: First, those who voluntarily vaccinate; second, those who will consent to vaccination; third, those who can be made to vaccinate; and fourth, those who refuse vaccination. The fourth class will be as difficult to reach through fear as by compulsion.

It is argued that quarantine is expensive; so are jails and houses of correction. It is argued that quarantine is inequitable, as the taxes that all contribute are used to protect a class. The same thing holds good in all classes of restriction by law and the majority may expect always and everywhere to pay for the minority who are in the wrong.

As a last word, this committee, upon investigation and deliberation, favor a return to the old law. This committee regrets exceedingly that Dr. W. S. Rankin, State Secretary of Board of Health, made use of the letter of Dr. Reynolds, a member of this committee, by publishing it unfairly in the State Bulletin without his knowledge or consent, and placing upon it a construction which unfairly represented his views. This letter was one of inquiry and was intended to develop information so that we might publish in the Bulletin our objections to the new State law.

Dr. Rankin in his letter states: "I have heard so far objections from three physicians to our 'no quarantine' advocacy. I have been informed that one county medical society passed resolutions against this law. I have said to two physicians and to the county medical society that I would give them space in our State Bulletin for thoroughly discussing the pros and cons of this question in public. No one of them has submitted anything for publication in the Bulletin, and I have seen no newspaper articles from physicians criticizing this law."

In reply, we would say that this report embodies the article he invited for publication.

The members of this committee have not entered into the campaign as yet against the views held by Dr. Rankin because they felt, first, they should secure all available information, and again, it should be submitted to the approval of this society.

(Signed) A. W. Callaway, M.D.
Eug. B. Glenn, M.D.
C. V. Reynolds, M.D., *Chmn.*

Reply to the Buncombe County Medical Society's Criticism of the State Board of Health's Management of Smallpox.

The Buncombe County Medical Society, seemingly in dire straits to find a position from which to make a successful attack, seek, through indirect statements which we shall hereafter specifically point out, to attribute to us a position which we do not occupy. Much of their "thunder" is therefore without effect except in the noise that it makes.

In substantiating the foregoing charge, we direct the reader's attention to the first line of the second paragraph of the committee's report, in which the committee endeavors to make it appear that there was once a State law requiring compulsory vaccination, which was repealed at the suggestion of the State Board of Health. The most charitable view that it is possible to take of this indirect and groundless criticism by the committee of the State Board of Health is to assume that the committee is grossly ignorant of State laws governing the management of smallpox. They certainly should know, before indulging in a criticism of this kind, that there never was a State law requiring compulsory vaccination. If there ever was such a law the committee representing the Buncombe County Medical Society should cite the section and chapter in which such law exists.

In order that the difference in the old law and the law of 1911 may be seen, we herewith reproduce both the old and the new law and ask the reader's attention to the requirements of the two:

OLD LAW.	NEW LAW.
1. Requires warning of existence of smallpox.	1. Requires warning of existence of smallpox *and* notification of means of preventing its spread.
2. Required vaccination of all admitted to county institutions, the county paying for the vaccine.	2. Leaves entirely to county board of health compulsory vaccination; the State Board of Health has recommended compulsory vaccination of all susceptible and endangered people, especially children of the public schools.
3. Power to *county authorities* to require vaccination of everybody under penalty.	3. The power to require children attending public schools to be vaccinated or to show certificate of immunity from smallpox given county authorities, and power, under section 9, chapter 62, Laws of 1911, given county authorities to require vaccination of all *other* persons who in their judgment should be vaccinated.

Again, we would point out the inference which paragraph three, page 73, of this report would lead one unfamiliar with the details of the present and past law to draw in regard to our position on compulsory vaccination. One reading the aforesaid paragraph would infer that the State Board of Health held either a noncommital or an antagonistic position in regard to compulsory vaccination. We know a very large number of health officers, practically all of the State health officers in this country and many of the municipal health officers, but we have never personally known or heard of a sanitarian of any prominence and trusted with any responsibility of importance who did not believe in compulsory vaccination. We certainly are, heart and soul, now and forever, advocates of compulsory vaccination. In fact, we believe so strongly on this point that we are doing everything in our power to take away that false security to which many intelligent people have vainly pinned their faith as a prevention of smallpox for a hundred years—the quarantine of smallpox. We believe that when this is done, and when people recognize that vaccination is the only protective power that will assure them safety from smallpox, and that quarantine, never known to suppress an epidemic of smallpox in an unvaccinated community without vaccination being made compulsory (quarantine only postpones the disease), be thrown out of consideration in the management of this disease, public health will be greatly benefited thereby.

Now, having made it plain, even to the committee representing the Buncombe County Medical Society, that the State Board of Health of North Carolina believes in compulsory vaccination, we hope to make our position clear on another important point, to wit: the authority by which compulsory vaccination shall be enforced. We believe that the local authorities, the municipal and county authorities, should enforce vaccination wherever it is ordered. Our reasons for this position are as follows:

First. We believe in democratic government, that is the right of the individual, the community, the town or the county to govern itself and to have sole jurisdiction in matters of local government *in all cases where their government affects them alone.* In the matter of compulsory vaccination the position taken by the local government, municipal or county, can affect only those municipalities or counties that make compulsory vaccination ordinances or that refuse to make them. In the first instance, with all of their people vaccinated no other town or county can start an epidemic of smallpox among them; in the second instance, with many of their people unvaccinated, emigrants from other towns, counties, or States may penalize them at any time for their failure to take advantage of the authority given them by *State law,* specifically, section 9, chapter 62, Laws of 1911, to have had, by compulsory vaccination, a community the health of which no other community could affect so far as smallpox is concerned. *Second,* the fatality from smallpox during the last five years in the United States has not exceeded one per cent; the fatality from measles, whooping cough, scarlet fever, and diphtheria during this period has been respectively 5, 10, 12.5 and 8 per cent. It will be seen from these figures that this disease—smallpox—for which people are not dependent upon the public for the uncertain protection afforded by quarantine, is insignificant as compared with the other contagions against which the *only* protection, imperfect at best, is quarantine. If the State could afford to equip its health department with an appropriation of three million dollars, as the Health Commissioner of Pennsylvania has at his command, then we would be in favor of a State law compelling vaccination, *because* we should have the funds over and above the needs for fighting our worse foes, tuberculosis, typhoid fever, malaria, hookworm disease, diphtheria, whooping cough, measles and scarlet fever, (we mention them in the order of their importance as we see them), ten to fifteen thousand dollars, to enforce a State-wide vaccination law. In our opinion it would take all of ten thousand dollars, that is nearly half of the present State Board of Health appropriation, to enforce a State-wide compulsory vaccination law. To use that much of the appropriation against the foe that carries away so few people as compared with other important diseases, and people, too, who could take care of themselves without putting the public to any great expense, would, in our opinion, be an unwise expenditure of the public funds.

In the third paragraph of their report the committee says that the State Board of Health interprets the law to allow towns and counties desiring quarantine to have it. We certainly do. Does the Buncombe County Medical Society question this interpretation of the law? And if Buncombe County or Asheville has the power to compel vaccination, and a compulsory vaccination is the remedy against smallpox, may I ask why the committee of the Buncombe County Medical Society does not use its influence with its home folk? And does not use the ammunition it is wasting in a long range fire at closer range? Why does the Buncombe

County Medical Society not throw their splendid influence into their County Board of Health, County Board of Commissioners, and get what we both advocate, a compulsory vaccination ordinance for Buncombe County?

Further, the Committee, by quoting from three eminent sanitarians, endeavor to make it appear that our opinion of the management of smallpox is in conflict with theirs. Take Dr. Bracken's position first: We agree with every word he says, and have never been in conflict with this opinion of his. In a letter, already quoted in the April BULLETIN, from Dr. Bracken, and which, by the way, Dr. Carl V. Reynolds mistakenly speaks of as his letter, and as a personal letter, Dr. Bracken says: "I realize that it is very difficult to get such laws as those in force in Germany, (that is State-wide vaccination law), *but I believe the method you are following in North Carolina, and that we are following in Minnesota* is much more likely to bring about vaccination laws than any attempt on the part of the State to give the impression to the people that they can be protected by quarantine." The States of Minnesota and North Carolina are in accord on the question of the management of smallpox.

Now take the quotation in the Committee's report from Dr. Woodward; read it carefully, analyze its meaning, and see wherein we disagree. We certainly agree with him that voluntary vaccination without compulsory isolation and disinfection is insufficient to prevent the spread of smallpox. On the other hand, we challenge our Buncombe County friends to get an opinion from Dr. Woodward to the effect that compulsory isolation and disinfection without compulsory vaccination will prevent the disease. We stand for vaccination, enforced by the laws of the county or State, but where that power is inert, enforced by the laws of God, under the penalty of the smallpox, and we are opposed to that false security, quarantine, which some communities afford and encourage their citizens to make use of as an excuse to avoid a civic duty, vaccination. As for the second clause in the first paragraph of the quotation from Dr. Woodward, we all admit that quarantine in an unvaccinated community is expensive, and we would add *worthless* in an attempt to suppress the spread of the disease as it prevails in its present mild form.

Yes, we are sorry, too, for the innocent babe, and the "ignorant adult" who, neglecting vaccination, gets the disease, but in this connection the censure we feel toward the local governing body that, by not enforcing vaccination when smallpox occurs, allows the unaccountable infant and adult to contract the disease, by far outweighs our sympathy for the afflicted. The last sentence of Dr. Woodward's quotation does not apply to us, as we are not in favor of "*purely* voluntary vaccination." (Italics are ours.)

As to the support they endeavor to draw from the opinion of Dr. Dixon, I wish to say that we agree with him, too, but that we wish to call attention to the fact that North Carolina has some laws for the control of smallpox, and, as we shall show in a subsequent BULLETIN, they are having the effect for which they were enacted, and, furthermore, we take the burden upon ourselves to show, by actual facts and figures, that there has been less paralysis of business from smallpox during the year 1911 than during the average year in which the old law was in force.

A word as to their alleged number "2" tabulated defect of the law: No, we do not believe in restraining unvaccinated cases. We believe in making use of them to demonstrate the effect of the disease to the ignorant, and as a threatened penalty to those who, like themselves, have put off the day of salvation and refused to be vaccinated. They preach repentance for the sins of omission better than public health literature, and this is a day of education in medicine. Don't waste your sympathy, my full-hearted friend, on the fellow who gets what he deserves—a case of smallpox. He needn't have had it. He could have protected himself. He ought to have been vaccinated. Nobody gets this disease except the negligent, and the Almighty Himself has devised natural penalties for negligence.

As to alleged defect "number 3," our answer to alleged defect "number 2" will apply.

Now, as to defects numbers "4" and "5" in their tabulation, to wit: that the present laws do not protect the irresponsible, the innocent babe, and the ignorant adult: this is emphatically denied. The present laws give the power for compulsory vaccination, which will protect these citizens dependable upon public intelligence. The present laws give the local authorities power to have a smallpox free community by having a compulsory vaccination ordinance. The State Board of Health has advised, and continues to advise, all local boards of health, municipal and county, to compel vaccination. It was to produce this very effect, and for no other end, that we have advocated the abolishment of that excuse in the management of smallpox—quarantine. Where the local authorities will not pass compulsory vaccination ordinances, then the present law does the next best thing. It gives a *most extensive* notification of the existence of the disease to those that are in danger, and with all the force that we can command we appeal to the unvaccinated to protect themselves in time, notifying them in the warning that their safety is in their own hands where their local authorities will not compel vaccination, and that they can secure absolute safety by being vaccinated at once. Again, we emphatically dissent from the opinion of the Committee representing the Buncombe County Medical Society that, such notification as the law prescribes and such as is carried out with the announcement "no quarantine," will not cause more people in a community threatened with the disease to become vaccinated than in a community where the notification is not so extensively given and where the newspaper announces that a quarantine is being "effectually enforced." How a body of men with the unquestionable intelligence of the Buncombe County Medical Society can go on record as saying that they believe that more people will be vaccinated in a community that quarantines and announces that quarantine is effectually established, as is the case nine times out of ten, than in a community where the people are notified that the disease exists and that no quarantine will be established and they can and must protect themselves by vaccination, we can not understand. The people of North Carolina will certainly agree with us in this latter opinion.

The committee's report says that the notification of the existence of the disease is not as prompt as it should be. Sections 17 and 18, chapter 62, Public Laws of 1911, require the householder or physician who knows of a case of smallpox to notify the quarantine officer *"immediately."* If the disease is in a thickly settled community, that is, urban, the health officer having his placards and notification blanks ready, at once proceeds to enforce the no quarantine regulation, or if the local government has adopted vaccination, to vaccinate. If the disease is in a rural or scattered population where it spreads more slowly than in an urban population, the health officer notifies the State Board of Health of the address of each citizen in the township in which the disease occurs, and each householder is notified by mail of the existence of the disease and the means of avoiding it, from the central office. If this is not as prompt as it should be and as is possible under the circumstances, we should be glad if the committee representing the Buncombe County Medical Society would suggest an improvement whereby greater promptness could be obtained.

Now, to the conclusion of the whole matter: The prevention of smallpox is vaccination. There is no other remedy. If quarantine could stop the disease it would have been abolished from the face of the earth ere this. This being so, that administrative policy that decreases the proportion of the unvaccinated to the vaccinated population does most in preventing the spread of smallpox. Moreover, the safety of the "innocent babe and the ignorant or procrastinating adult" is in direct proportion to the percentage of the vaccinated people among whom they live; just in proportion to the number of people who may carry smallpox, the unvaccinated, so does the baby's danger of the disease vary. The law that takes away the evasion for vaccination, and where through the local authorities it is impossible to enforce wholesale vaccination, fully notifies the citizen of the danger that he is in, and places the responsibility for such danger squarely upon the individual shoulders, and prescribes the proper remedy whereby he may avoid it, will cause a very large proportion of the population to be vaccinated, and to that extent protect the babe. We, therefore, maintain that a baby is safer in a town with a known policy of no quarantine of smallpox than in a town where it is attempted to handle the disease by the procrastinating subterfuge—quarantine.

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EDITORIAL

BY J. A. F.

"Not Skill, Nor Books, But Life Itself, is the Foundation of All Education"

MEDICAL INSPECTION OF SCHOOLS AND SCHOOL CHILDREN

The aim of this BULLETIN is to stimulate public interest in having in each county a superintendent of health who in addition to performing the customary duties shall conduct a thorough medical inspection of the public schools and school children. It intends to show that in failing to provide such an inspection we are not conserving the life of our future citizens, our greatest wealth, but that in this particular we are falling behind many states and countries. The work has been done effectively elsewhere. It can be done here.

The rearing of healthy, educated citizens to guide the ship of state demands that in their childhood they be shielded from disease and freed from those handicapping defects which blight health and ambition. This can not be done by the part-time health officers called in to fight disease after it has become epidemic, or to care for those who—often through medical neglect—have become criminals or paupers. It can be done only by a competent whole-time health officer who with the intelligent coöperation of the ever-present teacher will identify the first appearance of disease or defect and immediately apply the proper remedy.

It is regretted that medical inspection is carried on to such a limited degree in our State that data on the subject must be obtained almost entirely elsewhere. To Gulick and Ayers we acknowledge our appreciation for a most complete and valuable treatise on the subject. Their "Medical Inspection of Schools, one of the by-products of the 'Backward Children Investigation,' supported by the Russell Sage Foundation," outlines what is being done by states and cities in this work and the methods followed. We have quoted freely from it. The "Medical Examination of Schools and Scholars," by Kelynack, is a most exhaustive work on the subject, especially covering the systems used in England and other European countries.

To Dr. J. Y. Joyner, State Superintendent of Public Instruction, our thanks are extended for his hearty coöperation at all times in supporting every movement toward the fitting of our children physically and mentally for the highest and most useful type of citizenship. His contribution and the foreword of Dr. W. S. Rankin, Secretary to the State Board of Health, stress the imperative need of a systematic and thorough medical inspection of all school children. To these and the others who have contributed to this BULLETIN we express our thanks.

THE 1911 REPORT ON HOOKWORM ERADICATION

POINTS IN WHICH NORTH CAROLINA EXCELS

First. In North Carolina a larger percentage of the doctors are treating hookworm disease than in any other State.

Second. North Carolina doctors have treated and reported 24,709 cases of hookworm disease, the largest number credited to the physicians of any Southern State.

Third. The field staff of North Carolina up to April 1, 1912, has treated 6,500 more people for the disease than have been treated by the staff of any other State, notwithstanding we were late taking up the dispensary work.*

Fourth. During the first three months of 1912 the North Carolina staff treated as many people as were treated in any other two States during the same period.

Fifth. North Carolina has a larger number of county appropriations for free dispensaries than any other State.

Sixth. More local money has been raised in North Carolina for coöperating with the Hookworm Commission than in any other State.

INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY

Solution of the world-wide problem of combating the hookworm disease may be one of the results secured by the Fifteenth International Congress on Hygiene and Demography, which meets in Washington, September 23-28, 1912, under the auspices of the United States Government. Scientists have run the hookworm to its lair since the Fourteenth Congress, which was held in Berlin in 1907, and the forthcoming meeting will offer the first opportunity for hygienic experts from all countries of the globe to get together, compare notes and adopt a systematic and uniform campaign against what is regarded as the greatest scourge which affects more than half the population of the world.

The latest statistics which have been prepared by the Rockefeller Sanitary Commission contain figures which are startling in their magnitude and illustrate the imperative need for a union of all public health forces in fighting the hookworm. In brief, these statistics show that hookworm infection belts the earth in a zone about 66 degrees wide, extending from parallel 36 North to parallel 30 South, and that practically all countries lying between these parallels are infected. Of the foreign countries from which the commission received reports, fifty-four are infected. In six of these countries—Wales, Germany, Netherlands, Belgium, France, and Spain—the infection is wholly, or chiefly, confined to mines. In at least forty-six countries the infection is general and widespread. These countries have an area of 14,464,158 square miles, with 919,858,243 inhabitants.

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*NOTE—These facts imply that much interest is taken in the North Carolina campaign, but not that we have any more of the disease than have the other states.

Exhibits at the congress will portray conditions such as exist in Porto Rico, for example, where estimates have been made that ninety out of every one hundred of the working people are infected; in Colombia, where ninety per cent of the population living between the sea level and 3,000 feet above, are victims of the disease, and in India, where from sixty to eighty per cent of the 300,000,000 inhabitants are infected.

The economic effect of the disease will also be illustrated by charts showing that in many instances fifty per cent of the efficiency of labor is lost because hookworm anæmics can not do the work of physically sound laborers, and that this loss in the world each year runs into countless millions of dollars.

MODEL HEALTH WORK IN ROBESON COUNTY

A demonstration counts far more than mere words when people are to be convinced. In the March and April report of Dr. B. W. Page, County Superintendent of Health of Robeson County for his entire time, he gives an account of his stewardship.

In addition to enumerating the duties performed in connection with the county home, convict camp, county jail, commitments to the insane asylums, post-mortems, reporting to the State Board of Health, etc., he tells about a vigorous campaign conducted against preventable diseases quarantining 118 homes to prevent the development of epidemics.

Forty-five schools were inspected with a view to seeing that the surroundings were sanitary, the facilities for drinking water, surface closets, heating, ventilating, lighting, seats, blackboards, etc., were hygienic and adequate and the findings were submitted to the County Superintendent of Schools. Five hundred and twenty-five school children were vaccinated. Five hundred rural homes were inspected, and it was found that many of them had no kind of privy, and a majority of those found had no screens to keep away flies, or means for disposing of the excreta in a sanitary way.

The Robesonian, in commenting editorially on the work of Dr. Page, says: "Who would have thought that the (sanitary) conditions he describes could have been found in so many rural homes? The conditions found in Robeson may be found all over the State. The difference is that Robeson is ahead of most other counties in employing a Superintendent of Health to investigate conditions and tell how to remedy them. It is not a job to be handled with gloves. * * * This report ought to satisfy any reasonable man that the work is worth infinitely more than it will cost. It is impossible to calculate the value of the work among the school children alone."

What has been done is merely a beginning. The following announcement conveys some idea of the definite campaign to be pushed this summer. It affords a striking example of what can be done in Robeson. Other counties should take notice:

Health Campaign

Robeson County, assisted by the State Board of Health, will wage a vigorous campaign against Consumption, Typhoid Fever, Malaria, Smallpox, Hookworm, and other preventable diseases during the entire summer.

Lectures will be delivered, literature will be distributed and hookworm will be treated free at the following places and dates:

Rowland, Tuesdays, May 21, 28, June 4, 11.
Parkton, Thursdays, May 23, 30, June 6, 13.
Pembroke, Saturdays, May 25, June 1, 8, 15.
McDonalds, Tuesdays, June 25, July 2, 9.
Rennert, Thursdays, June 27, July 4, 11.
Lumberton, Saturdays, June 29, July 6, 13.
Maxton, Tuesdays, July 16, 23, 30.
Orrum, Thursdays, July 18, 25, August 1.
St. Paul, Saturdays, July 20, 27, August 3.
Howellsville, Tuesdays, August 6, 13, 20.
Fairmont, Thursdays, August 8, 15, 22.
Buie, Saturdays, August 10, 17, 24.

This will be the greatest health campaign ever waged in North Carolina. Every citizen should come out and see what is being done.

B. W. Page,
County Superintendent of Health.

Medical inspection of school children has been conducted in a systematic way in very few of our city schools and in practically none of the rural schools. This information is based on replies to letters of inquiry addressed several weeks ago to all city and county superintendents of schools in the State.

A half-dozen perhaps of the city schools have a regular card system of following up laggards in school, especially where the backwardness is due to physical defects. Many of the city and a few of the county schools have had hearing and vision tests made by the teachers, but with what results we can not learn.

The replies indicate that many of the schools have had the children tested for hookworm disease.

It was intended that the information collected would be tabulated. but it made such a small showing that it will be held as a basis for determining progress rather than to show any great progress already made. The work will now have a new stimulus as Dr. Ross, of Guilford, and Dr. Page, of Robeson, county health officers for their entire time, are beginning to show the possibilities for the protection of the health and vitality of the State's future citizens. Soon a change from the careless and dangerous customs now in vogue by which human life is endangered will be demanded by the people, who are fast becoming educated in sanitation.

A table will be found on page 93 giving the progress that has been made in the United States during the last few years in passing laws providing for the medical inspection of school children. It seems rather remarkable that within a period of three years twenty States should have enacted medical inspection laws after having remained dormant on the subject for so long. A bill was introduced in the last Legislature in the State, but failed to receive ratification. Failure to adopt a law of this kind simply means a failure to understand the fundamental necessities of our Commonwealth.

The photographs on pages 100 and 102, supplied by Dr. W. Perry Reaves, of Greensboro, showing groups of children defective from adenoids or tonsils before operation and the same children after operation, supply a striking example of the possibilities of medical inspection. A bulletin issued by the Board of Education of Cleveland, Ohio, has other examples equally convincing. In addition it shows large classes which have had defective vision corrected by the use of glasses. The Selma Ellis case (pages 104 and 105) is one of the most remarkable of the many thousands of cases of hookworm disease cured. When it is possible to give a child life, health, and happiness, can we longer allow them to remain neglected?

THE NEED OF MEDICAL INSPECTION OF SCHOOLS AND SCHOOL CHILDREN

By J. Y. Joyner, State Superintendent of Public Instruction.

The development of the body proportionately with the development of the mind, that a sound mind may have a sound body with which and through which to work effectively, has been recognized by all thoughtful educators in all enlightened lands from time immemorial as an essential part of education.

The first duty of every teacher and every school official is the protection of the health and lives of the children committed to his care. Careful attention should, therefore, be given to providing healthful surroundings in the schoolroom and on the school grounds, to the prevention of disease by the removal, so far as possible, of the causes of disease from schoolroom and school grounds, to the detection and correction of physical defects and diseases by systematic and scientific inspection of the children. This work will never be properly emphasized and effectively done in our schools without a definite system of medical inspection of children, schoolrooms and grounds under the direction of a practical, scientifically trained health officer, devoting his entire time and attention to it.

It affords me pleasure, therefore, to call careful attention to this excellent bulletin on Medical Inspection, and to bespeak the hearty coöperation of county superintendents, teachers, and all other citizens interested in the education of the children of North Carolina with the State Board of Health in its commendable efforts to secure competent, trained health officers in every county, who shall give a reasonable part of their time to medical inspection of the public schools and to the direction, in coöperation with the teachers and school officials of the county, of the health work in the schools.

THE RELATION OF PHYSICAL TO MENTAL DEVELOPMENT

By W. S. Rankin, Secretary State Board of Health.

In the natural order of things, we begin with the lower and fundamental and from them pass to the higher. Creation, itself, according to both its interpreters, Moses and Darwin, followed this order: there was first the inanimate or inorganic world, then the vegetable world, then the lower animal world with its culmination in man, the embodiment of the Creator Himself.

This Omniscient method of development is emphasized by repetition in the embryonic or prenatal development of that epitome of nature, the child: the body framework, the heart, the blood vessels, the alimentary organs, then the nervous system, and of this last its higher part, the thinking brain or mind, come forth in due order, as the perfume of a beautiful flower finds its way from the dead soil to the ethereal world.

During the last half century mental development, as indicated by declining illiteracy, has been marked; during the same period of time there has accumulated considerable evidence which indicates that decreasing illiteracy and racial development, the latter the true object of education, have not gone on hand in hand; in fact, the evidence indicates a decrease in illiteracy coincident with an increase in racial deterioration. But, the educational forces of today are awake, and their present praiseworthy interest and activity in the physical side of education, as expressed through the extensive adoption of medical inspection of schools and the placing of greater stress on the study of hygiene, indicates a future in which the race will develop in vigor of *both* mind and body. In the past, the narrow vision of the pedagogue has been restricted to the mind, a part of the child; in the future the teacher who is broad-visioned will behold the child. In this broader vision those biologic laws interpreted for the first time during the last half century will have precedence over the conjugations and declensions of dead languages. The body and mind will be recognized as forming an indissoluble union, and what God has joined they will not seek to separate. When our educational systems recognize this true relation of the body and mind in the development of the future citizen, their activities will harmonize with the eternal order of things.

THE TEACHER AND PUBLIC HEALTH

By H. W. Chase, Professor of the Philosophy of Education, U. N. C.

The movement for the care of the health of school children has become world-wide. In this country at least five States now require the medical inspection of all schools, and in others it is optional. All of our largest cities, and many of smaller size, have introduced some system of physical inspection. Care of eyes and ears, throat and nose, defective teeth, in clinics which are often free, school lunches of nourishing food provided at cost or without charge, school nurses, playgrounds with carefully supervised games, gymnasia in school buildings, are very common. Two educational journals of national reputation devote practically all their pages to subjects bound up with the physical welfare of children, and the amount of literature on the subject in other quarters can only be described by the adjective "voluminous."

But, except for some of our cities, the movement has so far been too much confined to the strictly medical phases of the problem. Physicians have rendered and are rendering splendid service, but this service must be supplemented by constant instruction in matters of hygiene and sanitation by the teacher. The detection of disease and the correction of defects are but a part of the work; personal habits must in the last analysis depend for the most part on the work done in the school by the teacher. And in smaller communities, where adequate medical inspection is hardly possible, it is still more on the teacher that the responsibility must fall.

There can be no question that instruction in matters of hygiene and sanitation should be part of the knowledge required of every teacher. More should be required than the average text-book on physiology contains. Common infectious and contagious diseases, how to detect them and safeguard against them, the proper procedure when they appear in school, the physical dangers of school work and how to guard against them, proper regimen for the youth of both sexes, sanitation as it affects the individual and the community, should be some of the things which every teacher should know. We may look forward to the time when public sentiment will be educated to the point of demanding these qualifications of every teacher. It is surely as important that he shall be able to care physically for the children in his charge as to instruct them mentally. One only has to have a slight knowledge of conditions in the average community to be impressed with the good the adequately trained teacher might do along this line. If we are to improve sanitary conditions in our communities we must begin with the children.

At the University this year a beginning has been made of such instruction for intending teachers in a rather uncorrelated way, using as a basis the excellent bulletins of the State Board of Health. It is planned to extend this work next year, and, with the reorganization of the work in the near future, to introduce a complete course in hygiene and sanitation.

But the instruction of the teacher alone will not suffice. We must further see to it that the teachers actually give definite and adequate instruction to their pupils. Physiology as at present taught in the average school is admittedly a failure. Pedagogically it belongs to the dark ages. More than that, in spite of State laws, it is almost extinct. The current report of the State Inspector of High Schools shows that in 69 city schools 5,974 pupils were studying Latin and 208 were dallying with physiology. In the State high schools, 4,714 were engaged in the study of Latin and 80 were students of physiology. That is at just the time when our young people need worst of all some instruction in sane ways of living, they are left without instruction. Which is the more important for the welfare of the average pupil, a knowledge of the conquest of Gaul or of the fight against hookworm? a knowledge of the sanitary privy or of the Cloaca Maxima? Of such wrong emphasis are we teachers guilty.

We need saner text-books. Knowing the number of bones in the body, being able to trace the circulation, often affect the daily conduct of our pupils about as much as being able to give the names of the satellites of Saturn.

Habits of personal cleanliness, proper body-keeping, a knowledge of rational diets, of sources of contagion, of what makes clean milk and water, the dangers of soil pollution, a deep sense of personal responsibility to the community in all that makes for public health, these are a few of the things that we need to inculcate in our students. It ought to be a far more serious criticism of a teacher that he fails in these things than that his pupils are deficient in language, or history, or mathematics. When the public conscience awakens to a sense of the prime importance of the healthy body as well as the full mind, will it not call us sharply to account for our neglect of these matters?

THE MEDICAL INSPECTION OF SCHOOLS AND SCHOOL CHILDREN

By Jno. A. Ferrell, S.B., M.D., Ass't. Secretary to State Board of Health for Hookworm Disease

THE MEDICAL INSPECTOR IS A REPRESENTATIVE OF THE BOARD OF HEALTH AND OF THE BOARD OF EDUCATION.

The medical inspection of schools and school children is a service performed by a physician representing the Board of Health and the Board of Education conjointly. His duties embrace an inspection of school premises relative to the sanitary condition of the school property and the vicinity immediately surrounding it; the school children for the identification of all those requiring medical care; the exclusion of those suffering from communicable diseases; the detection of ailments, defects or diseases other than communicable diseases, the examination of the drinking water, the inspection of privies, and other school facilities necessary to the protection of the health and vitality of those attending school.

It is the work of the health department in that it aids to prevent or eradicate disease, to protect health, and to teach our children *how to live* to be useful citizens. It is the work of the Educational Department in that it saves and preserves the child for the school, a healthy, educatable child, one whose heart and mind are receptive to training, one whose life will bless the State with the highest type of citizenship. Both departments in endeavoring to meet what may have seemed emergencies have been giving their efforts primarily to other lines of work, and only secondary consideration has been given to the line of activity fundamentally essential to placing the work of either department on a firm foundation.

The conducting of medical inspection is so essential to both departments and so inseparable, at this time, from either, that the inspector should be a representative of both acting conjointly. With any other arrangement there might arise a conflict of authority. If there is to be any separation of the respective departments in the work the authority for its conduction should be logically vested in the educational department, with power when conditions warrant it to delegate the authority to the health department.

THE MEDICAL INSPECTOR—HOW SELECTED.

As the medical inspection among our rural schools represents something of a pioneer work its success or failure will be governed very largely by the man selected as inspector. He should be a physician well equipped with collegiate and professional training. He should possess discretion, tact, patience, enthusiasm for the work, and the power to inspire enthusiasm in others. Previous experience in school and health work is a very desirable requisite. Possessed of these qualifications the man needed will always command an adequate income. It need not be expected, therefore, that he can be had without his being compensated on a basis commensurate with what he would receive in private practice. To let out work of such vital importance to the lowest bidder, to one perhaps who needs the salary because in private practice he is so seldom sought, would be fatal to the work, and should be regarded as criminal. The man chosen should be the fittest physician obtainable, without regard to County or State boundaries.

THE MEDICAL INSPECTOR—HOW OBTAINABLE.

The county commissioners now pay a county superintendent of health to care, as a rule, for those who—often perhaps through medical neglect—have become paupers or criminals, and to fight disease usually after it has become epidemic. It is the exception to find applied the principle of "a stitch in time saves nine." The toll paid directly and indirectly as a result of such a system is appalling. The jails are filled; the county homes are crowded; the dependents are numerous; schools are poorly attended; many children are backward and require two years to complete what should be accomplished in one; frequently on account of epidemics schools are actually closed for weeks and months, quarantines are established, business suffers, and there is general stagnation.

The county can not afford to longer tolerate this poor business policy. It must invest in the best talent obtainable, regardless of price, to protect it from such conditions. The "stitch in time" principle must be applied.

To take the entire amount needed from either the general county fund or from the school fund in a small county might cause some slight inconvenience, but if both funds will support the inspector who is mutually the choice of the Board of Health and the Board of Education, the expense will not be heavy on the Commissioners nor on the Board of Education. As a matter of fact, it should make little difference which tax money is used to provide for medical inspection, as it affords protection to all the people and may well be regarded as either regular health or regular school work.

The counties of Guilford and Robeson have employed capable superintendents of health for their whole time. A number of other counties have begun some medical inspection work and are increasing the compensation of their superintendents accordingly.

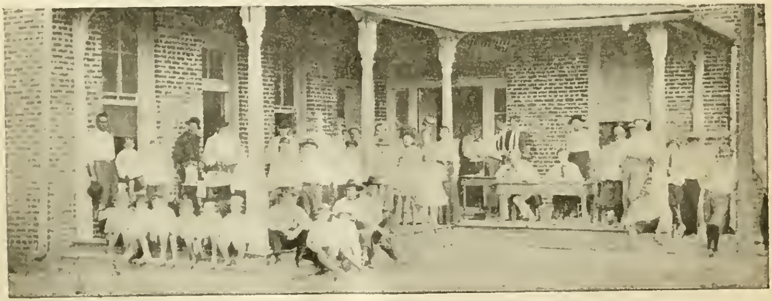

FIG. 1. State and county dispensaries for the free examination and treatment for hookworm disease have been phenomenal successes. The photograph above shows one of the dispensaries in Robeson county. Two hundred people were treated on the day the picture was made. Thirty-eight counties in the State have provided small appropriations for the local expenses of this work. Up to date 63,000 people have been treated for the disease in the State. Ten Southern States are engaged in similar campaigns.

HISTORY OF MEDICAL INSPECTION.

Medical inspection of schools has been marked by a steady growth in the United States for the past twenty years. In certain foreign countries it has been in vogue for a much longer period, and is now conducted on a permanent and definite basis. Both here and abroad it was first adopted by the city schools. It was soon found indispensable to them and has been gradually adopted by the schools of towns and villages. Within the past three or four years it seems to have dawned on our people that if medical inspection is indispensable in city schools it must also be indispensable in rural schools. Within this time twenty States have enacted laws providing for medical inspection. The following table by Leonard P. Ayres, Ph. D., gives the dates and also the character of the laws passed by the respective States.

PRINCIPAL FEATURES OF STATE LAWS AND REGULATIONS PROVIDING FOR MEDICAL INSPECTION—1911.

State.	Date Adopted.	Permissive or Mandatory.	Administered by School or Health Authorities.	Inspection by Doctor for Contagious Diseases.s	Physical Examination by Doctors.	Inspection of Teacher, Janitors and Buildings by Doctors.	Sight and Hearing Tests by Teachers.	Normal Pupils Trained in Tests of Sight and Hearing.	Provision for Employement of Nurses.	Penalty for Violation of Law.	Parents Compelled to Remedy Condition Discovered.
California	1909	P	H	------	------	------	------	------	------	------	------
Colorado	1909	M	S	------	------	------	X	------	------	------	------
Connecticut	1907	P	S	X	X	X	------	------	X	------	------
District of Columbia	1907	M	S	X	------	X	------	------	------	------	------
Indiana	1911	P	S or H	X	X	X	X	------	------	X	------
Louisiana	1911	M	H	------	------	------	------	------	------	------	------
Maine	1909	P	S	X	X	X	X	------	------	------	------
Massachusets	1906	M	S	X	X	X	X	X	------	------	------
Minnesota	1910	M	S	X	X	X	X	X	------	------	------
New Jersey	1909	M	S	X	X	------	------	------	------	------	X
New York	1910	P	S	------	------	------	------	------	------	------	------
North Dakota	1911	P	S	------	X	------	------	------	------	------	------
Ohio	1910	P	S	X	------	X	------	------	X	------	------
Pennsylvania	1911	M	S	X	X	X	------	------	X	------	------
Rhode Island	1911	M	S	X	X	X	X	------	------	------	------
Utah	1911	M	S	------	X	------	X	------	------	------	------
Vermont	1910	P	S	X	------	------	------	------	------	------	------
Virginia	1910	P	S	------	------	------	------	------	------	------	------
Washington	1909	P	S	X	------	X	------	------	------	------	------
West Virginia	1911	M	S	X	X	X	------	------	X	------	------

THE NEED OF MEDICAL INSPECTION.

The results of medical inspection are tabulated in so few instances that it can not be said definitely what percentage of children are defective. Those available, however, do not differ widely from those of New York City and Minneapolis, which are as follows:

PHYSICAL EXAMINATIONS IN NEW YORK AND MINNEAPOLIS.

	New York City.		Minneapolis.	
	1906	Per Cent	1908	Per Cent
Number Examined	78,401	100	710	100
Bad Nutrition	4,921	6.3	166	23.3
Anterior Cervical Glands	29,177	37.2	377	53
Posterior Cervical Glands	8,664	11	----------	----------
Chorea	1,380	1.7	2	.2
Cardiac Disease	1,096	1.4	15	2.1
Pulmonory Disease	757	.9	30	4.2
Skin Disease	1,558	1.9	12	1.6
Deformity of Spine	424	.5	----------	----------
Deformity of Chest	261	.3	----------	----------
Deformity of Extremities	550	.7	----------	----------
Defective Vision	17,928	22.8	170	23.9
Defective Hearing	869	1.1	55	7.7
Defective Nasal Breathing	11,314	14.4	----------	----------
Defective Teeth	39,597	55	309	43.5
Defective Palate	831	1	2	.2
Hypertrophied Tonsils	18,306	23.3	221	31.1
Postnasal Growth	9,438	12	91	12.8
Defective Mentality	1,857	2.3	----------	----------
Where Treatment was Necessary	56,259	71.7	462	65.1

Dr. G. F. Ross, Superintendent of Health of Guilford County, N. C., has had the coöperation of the county teachers in his medical inspection of rural schools, a work covering only a few months. He requested the teachers to supply a list of those children who seemed noticeably defective (10% of their total enrollment). Sixty teachers "sent in lists showing that over 1,200 children do need medical attention." Personally he has examined 400 of them, finding "97% of those examined have noses and throats filled with adenoids and tonsils. These children were undersized and underweight."

"Eight per cent have varying degrees of deafness, probably from the nose and throat conditions.

"A large percentage have various eye troubles, doubtless for the same reason.

"Sixteen per cent of those examined are victims of hookworm disease."

Continuing, Dr. Ross writes: "Several cases of pulmonary tuberculosis and hip-joint disease were found, and of course the various parasites."

"From what I have found and from the improvement in health and school work noted after operation, we should, here in Guilford County, turn our attention to adenoids and tonsils. Children after treatment have gained six to twenty pounds up to date and show remarkable quickening of their mental faculties." "Another matter which we should stress is that of cleanly teeth." He found little care given to the teeth.

Dr. Ross is getting his work well in hand and is giving evidence that an investment in medical inspection pays. Dr. B. W. Page has begun similar work in Robeson County. Soon we shall have all the data desired from our own schools collected by reliable methods.

HOOKWORM DISEASE.

The distribution and degree of prevalence of hookworm disease is as definitely determined in North Carolina perhaps as in any State or country in the world. Even if the county health officer should devote his entire time to its eradication alone, the expense would doubtless represent one of the best investments ever made in protecting health and life. In our State campaign we have microscopically examined more than seventy-one thousands of people for the disease, and have already treated 63,142 cases. We know that the disease prevails in all of the one hundred counties of the State with greater or less frequency.

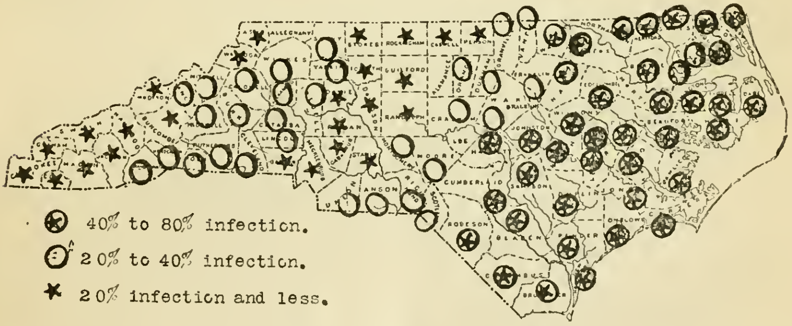

FIG. 2. Map showing the prevalence and distribution of hookworm disease in North Carolina.

In determining its frequency by counties we microscopically examine not less than two hundred rural school children—ages six and eighteen, inclusive—taken at random in each county. The surveys are complete in twenty-nine counties and partially complete in other counties to a degree sufficient to justify the map (Fig. 2) on the frequency of hookworm disease in North Carolina. The following is a list of those counties having a complete infection survey (together) and the percentages of infection found:

County.	No. Examinations	Per Cent Infection.
Burke	426	59
Carteret	1333	64
Caldwell	337	63
Columbus	263	88
Cumberland	1537	50
Davie	225	17
Duplin	257	73
Hertford	389	31
Johnston	394	35
Martin	457	47
McDowell	287	71
Mitchell	210	52
Montgomery	248	20
Pender	612	69
Pitt	412	67
Randolph	254	17
Robeson	1411	51
Rowan	246	21
Sampson	859	80
Wake	200	25
Warren	399	40
Wayne	1943	54
Yancey	557	31
Craven	1509	54
Chowan	544	40
Gates	889	35
Bertie	1539	48
New Hanover	268	51
Beaufort	423	66

Can we neglect to have the simple examination made and the treatment administered for this disease, knowing that by it more than one-fourth of all our girls and boys are being stunted in their bodies, dulled in their minds, robbed of their vitality, rendered backward in their work, and started on a road which will lead them to death, invalidism, or perhaps to prisons?

The superintendent of health could do much to eradicate this disease by conducting from time to time free clinics such as is being done by the Hookworm Commission. These would be for the benefit of those who for the lack of means or other reasons have failed to seek cures from their family physician.

MEDICAL INSPECTION JUSTIFIED.

The public schools are a public trust. "Where a parent delivers his child to their care, he has a right to insist that the child under the supervision of the school authorities shall be safe from harm, and will at least be handed back in as good condition as he was before. If the parent does not claim this right, the child has a right to claim it. Where a State for its own protection compels a child to go to school, it pledges itself not to injure itself by injuring the child." If a child who is diseased, defective or otherwise handicapped is forced to compete with a normal healthy child, he is over burdened and is subject to a more complete wrecking of his mental or physical well-being. If his ambition is stifled and he refuses to compete he is likely to grow up to swell the ranks of the unemployed and the unemployable.

"It will be found ultimately that it is a great deal cheaper to spend pence on children than pounds on paupers." Unless the bodies of children are attended to they may be distinctly injured by school work.

SCOPE OF MEDICAL INSPECTION.

The medical inspection of schools embraces, or should embrace, (1) an inspection of the school plant with a view to making it hygienic; and (2) an inspection of those attending school for the detection of (a) communicable diseases or (b) non-communicable diseases or defects.

INSPECTION OF THE SCHOOL PLANT.

The school plant may be inspected preferably during vacation, or if necessary while school is in session. The inspector observes the site relative to its elevation and drainage. If there are nearby ponds where the malaria carrying mosquito may breed, he recommends its drainage. He inspects the school building to ascertain that it is suitable and adequate to the needs of the school district. The provision for its heating, ventilation, and lighting are inspected and those changes needed are called to the attention of the school committee. While in the building he examines the school desks with reference to the lines of their construction. He knows that spinal curvatures and other deformities are often caused by poorly constructed desks; how to place the windows so that studying will not injure the eyes; the method of heating which will keep the children comfortable; the kind of blackboards which will be easy on the eye; the sanitary method of cleaning the schoolroom and the place for the teacher's platform and desk. He will see that there is an adequate cloak room where wraps and hats may be hung, and a closet where lunch baskets may be safely put away. Of all these things he takes notice, and offers such suggestions for improvements as may be practical.

In addition to the things mentioned, there are two school necessities to which he pays especial attention. In the large towns they may be found within the walls of the buildings, but in villages and rural schools they are found or should be found on the school grounds. One is the drinking water supply, the second the water closet or surface privy.

The Drinking Water Supply.

If the drinking water is derived from a city supply which is regularly examined monthly by the State Laboratory of Hygiene, it would be regarded as safe providing the plumbing was modern. If, on the contrary, the supply comes, as is usually the case in villages and rural schools, from an open spring or well, there is great likelihood that it is polluted. In cases where pollution is suspected, samples of the water should be collected by the inspector, to be examined in the State Laboratory of Hygiene.

Knowing that diseases are often scattered by the use of common drinking cups or towels, he lectures to the children on these along with other points and urges the use only of individual towels or paper towels, and of individual cups if the sanitary drinking fountains are impracticable

SNELLEN TEST SHEET, (See Direction pages 109 and 110.)

70 ft. or 21 m.

D L N

50 ft. or 15 m.

P T E R

40 ft. or 12 m.

30 ft. or 9 m.

O F L C T G

20 ft. or 6 m.

A P E O R F D Z

15 ft. or 4.5 m.

N P R T V Z B D F H K O

Fig. 3.

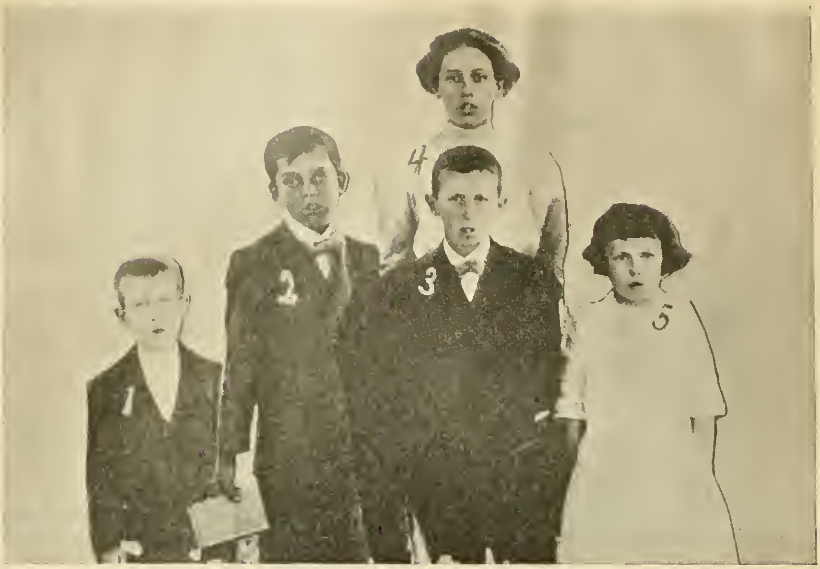

Fig. 3. Group of children at one of Guilford County's graded schools, suffering with large adenoids and tonsils. Their adenoid faces suggests nasal obstruction. General condition below normal, round stooped shoulders, frequent colds, snorers and poor sleepers at night. (Courtesy Dr. W. Perry Reaves.)

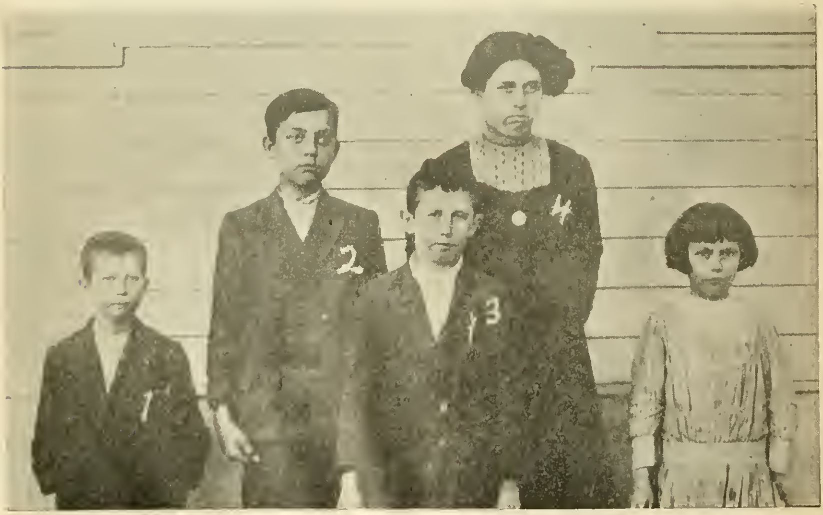

Fig. 4. Same as Fig. 3. Three to five months after adenoids and tonsils were removed, teaches the lesson, "shut your mouth to save your life." All gained in weight. Girl No. 4 gained fifteen pounds in three months. (Courtesy Dr. W. Perry Reaves.)

History of Treatment of the Groups Seen on Opposite Page

(Supplied by Dr. W. Perry Reaves.)

No. 1.—History: Male, age 8; second year in school, in lower first grade.

Symptoms: Has sniffles, colds, and stammers, mouth breather, general condition poor.

Diagnosis: Large tonsils and adenoids.

Treatment: December 27, 1910, removed tonsils and adenoids. May school report five months later, advanced more in five months than in one year and a half before. Now compare his physical condition, which has improved equally as much.

No. 2.—History: Male, age 11; fifth year in school, fifth grade; hearing not good, inattentive, mouth breather.

Diagnosis: Large tonsils and adenoids, catarrh of eustachian tubes, poor ventilation of middle ear, causing retracted drum. Right ear could hear watch ten inches; left ear could hear watch fifteen inches.

Treatment: December 27, 1910, removed tonsils and adenoids. May 23, 1911: Right ear, watch nine feet; left ear, watch twelve feet.

Hearing improved about one thousand per cent; general condition changed from hook-worm type to a rosy cheeked lad; gained ten pounds in weight. School report before operation, was hard for him to make his grades; after operation, was never again sent to office for failure to do his work. How came this great change? Relieved congestion at the base of the brain by nasal breathing. The catarrh of the tube cleared up, ventilating the middle ear, and the hearing returned to normal; plenty of oxygen to the lungs and tissues caused the increase in weight, physical and mental ability.

No. 3.—History: Female, age 7 years; first year in school, lower first grade.

Symptoms: Head colds.

Diagnosis: Large tonsils and adenoids.

Treatment: Removed tonsils and adenoids. Five months later, promoted to second grade, better attendance, health improved.

No. 4.—History: Female, age 10; third year in school, second grade.

Symptoms: Ear aches, mouth breather.

Diagnosis: A V-shaped arch of hard palate, adenoids (adenoid facies).

Treatment: Removed adenoids. Five months later, school report, promoted to third grade. Before operation, reports poor. After operation, good and excellent. Seems much stronger physically.

No. 5.—History: Female, age 8 years; third year in school, first grade; hearing not good; inattentive.

Diagnosis: Tonsils and adenoids. V-shaped arch (no adenoid facies).

Treatment: Removed tonsils and adenoids. Five months later, school report: Promoted to second grade; work much better; still inattentive because of habit acquired.—"The inattentiveness is not from habit but because the hearing was so impaired that it did not return to normal." (Dr. Reaves.)

Right ear for watch, before operation, 24 inches; right ear for watch, after operation, 48 inches; left ear for watch, before operation, 20 inches; left ear for watch, after operation, 40 inches.

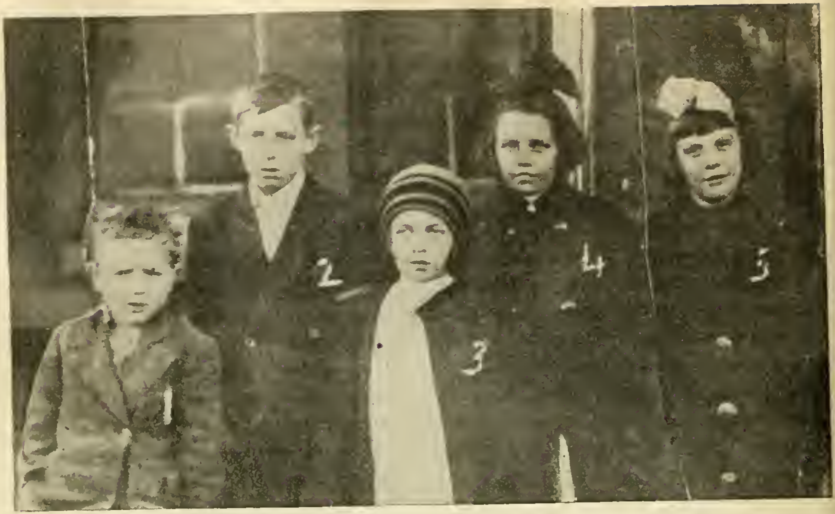

Fig. 5. Group of children at the Training School of the State Normal and Industrial College, Greensboro, N. C. Referred by their teachers to Professor J. A. Matheson, Head of Department of Pedagogy, as backward and defective children. Inspected and treated by Dr. W. Perry Reaves. Their school records were compiled by Professor Matheson from the teachers' records in December, 1910, and May, 1911. They were operated on the last week in December, 1910. (Courtesy Dr. W. Perry Reaves.)

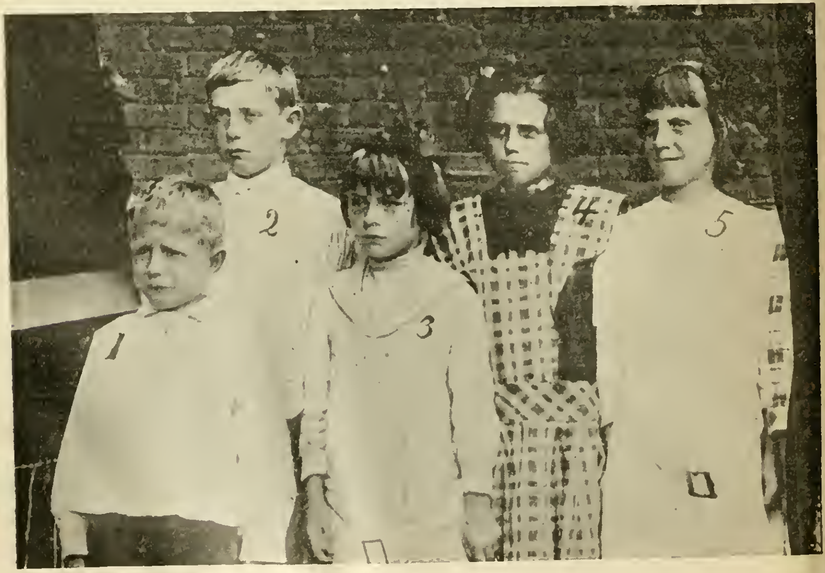

Fig. 6. Same as Fig. 5, five months later after removal of adenoids and tonsils. Improvemen in hearing and work, equaled or excelled the physical improvement. (Courtesy Dr. W. Perry Reaves.

Water Closets or Sanitary Surface Privies.

Where school buildings are accessible to water and sewerage, water closets should be provided and kept in good condition. This affords the ideal method for disposing of the excreta. Nine-tenths of our schools have, however, no sewerage facilities. It is of the utmost importance that they be provided with the best substitute for water closets—the sanitary privy. The inspector should not rest until there are two such privies for each school.

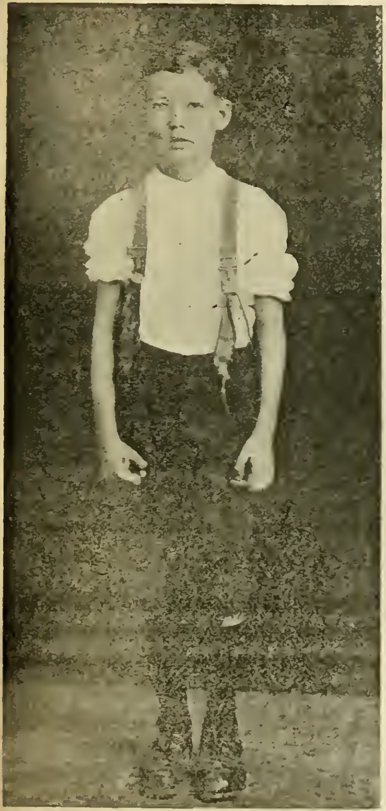

FIG. 7. A Pitt county boy the day he was treated at the county dispensary for hookworm disease.

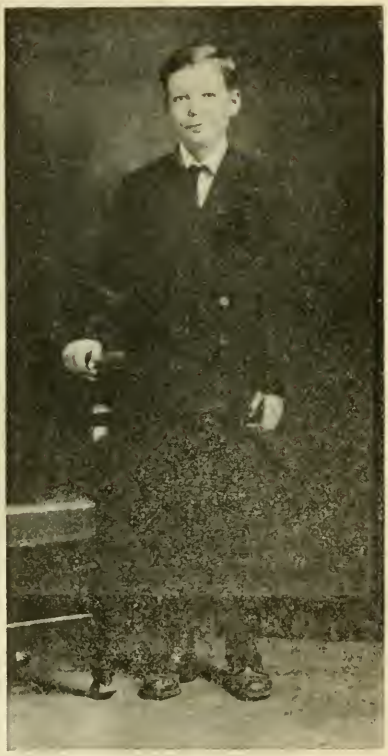

FIG. 8. The same boy after taking three or four treatments was completely cured. He gained in weight, regained his color; and was freed from suffering.

By a sanitary privy is meant one that affords comfort and privacy and at the same time prevents the spread through the excreta of certain filth-borne diseases, such as typhoid fever, hookworm disease, diarrhœa, dysentery, etc.

Its essentials are:

(1) A water-tight receptacle for receiving the excreta as it is discharged from the body.

(2) An arrangement which will protect the contents of the receptacle from contact with flies and other living creatures which might scatter disease germs.

(3) A means by which the excreta may be removed from the receptacle and rendered harmless by some method approved by sanitarians.

The writer has prepared a pamphlet on the plans, specifications, and bills of material for the building of sanitary privies and will send them free on request.

It is a shame that all too often no kind of privy is provided. The girls lay claim to the woods or bushes in one direction from the schoolhouse and the boys another. In many places a forward step has been taken and scraps of lumber have been used to close in a shanty which scarcely affords privacy and certainly is not sanitary.

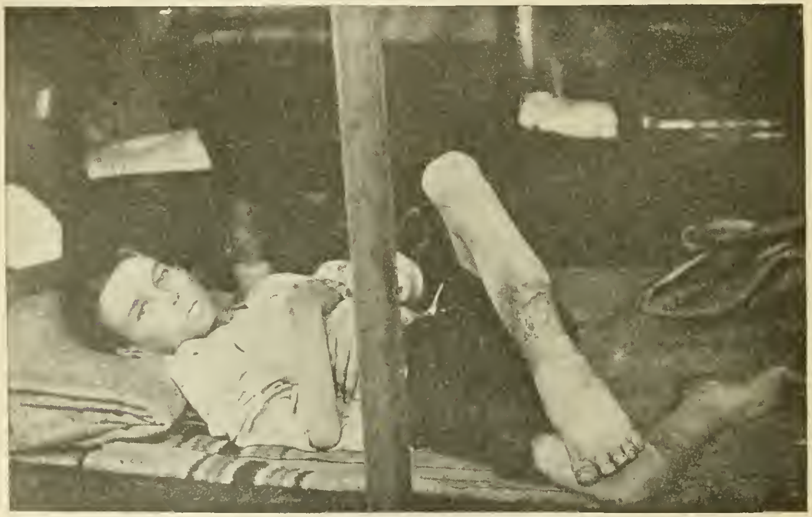

FIG. 9. Selma Ellis, of Columbus county. Photograph made at county dispensary. Age 16, weight 62½ pounds; anemic ulcer on leg; ill 8 years. He was unable to go to school or work; in fact he was unable to sit or stand. Notice the change made in 7 weeks by a few cents worth of thymol.

This lack of privacy is so repugnant to young women and girls that they repeatedly postpone the call of nature and ultimately develop a condition which permanently impairs their health. Aside from this consideration, we know many people to be "carriers" of disease germs who are not suffering now and perhaps have not for months or years with any manifestation of sickness. Where their excreta is deposited on the ground, soil pollution results, and disease germs carried by flies, drinking water or otherwise find entrance into the bodies of the children. Where, then, there is a neglect to provide sanitary privies at schools, the school becomes a place for the exchange of disease rather than a place where means of preventing disease is taught and the teachings put into practice.

MEDICAL INSPECTION OF CHILDREN.

The inspection of those who attend school is made of course while school is in session. Where time permits, every child, teacher, and school employee should be examined by the medical inspector. This is practicable in cities, and is desirable also in rural schools, but on account of the intervening distances and small schools, it is not yet feasible.

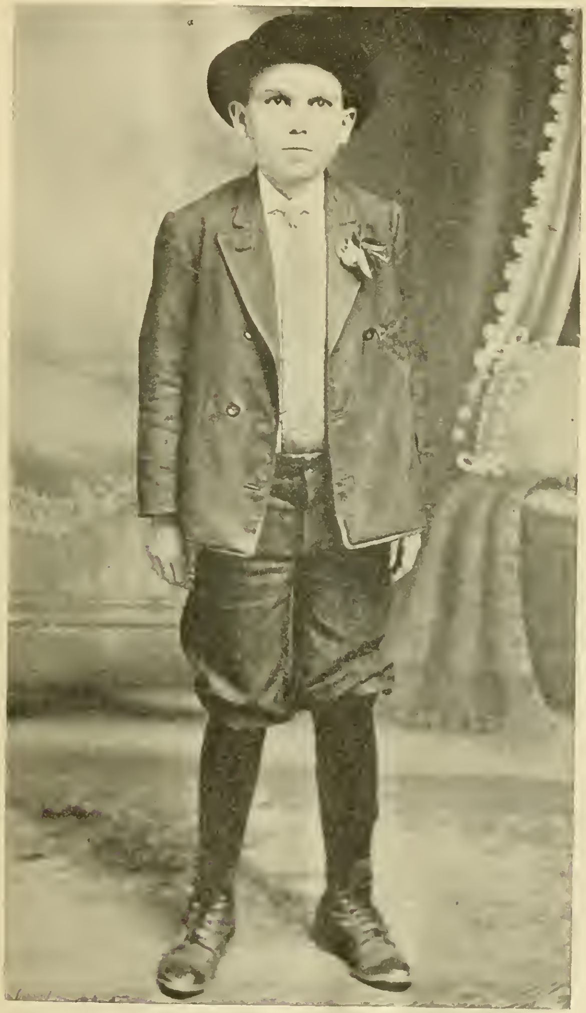

FIG. 10. Selma Ellis seven weeks later after taking the hookworm treatment. He was able to walk and run; weighed 79 pounds; and during the past winter he has been in school.

A method which is practical requires that the teacher be acquainted with the important points suggesting disease or defect. This information may be obtained from lectures at teachers' meetings by the inspector and from a brief manual supplied by him. All those children who to the teacher seem backward, diseased or defective, are listed by the teacher. These are carefully examined by the medical inspector on his visit to the school. When he finds disease or defect he makes a record of the case, and the case is disposed of as the occasion demands. A communicable disease requires the exclusion of the child; a non-communicable disease or a defect is recorded, and the parent notified and urged to give the child the needed medical attention.

Some method of keeping track of each child is used so that infectious diseases may not spread; and in order to know what children have received medical attention. To compare the progress before and after the correction of defects furnishes a very interesting study, one that leaves no room to question the expediency of having medical inspection.

Each one of us can recall instances in which a failure to invest in a capable *health protector* proved very expensive to a county, costing much sickness and perhaps human life, not to mention other expenses. The epidemic gained such headway that the schools were closed, hundreds of dollars were spent in quarantines established too late, and children were robbed of school advantages. All this happened because there was no whole-time capable health officer who with the intelligent coöperation of the teachers could take charge of the situation at the proper moment and prevent the epidemic.

Communicable Diseases.

The following is a list of those diseases to which special attention is given by the medical inspector, and with which the teacher should have a thorough acquaintance:

Diphtheria.
Scarlet fever.
Measles.
Smallpox.
Chicken pox.
Whooping cough.
Influenza (grippe).
Mumps.
Eye diseases.
Trachoma.
Pink eyes.
Ring worm.
Scabies (itch).
Pediculosis (lice).
Impetigo contagiosa.
Typhoid fever.
Hookworm disease.
Malaria.
Tuberculosis.

Non-communicable Diseases or Defects.

Whether or not any of the communicable diseases make their appearance to demand the time of the inspector, there will always be found children suffering from some remediable affection which renders them backward. Among these may be named:

Anemia (impoverished blood).
Enlarged glands.
Nervous diseases.
Heart disease.
Lung disease.
Feeble mindedness.
Skin disease.
Bone deformity.
Defect of vision.
Defect of hearing.
Defect of breathing.
Defective teeth.
Enlarged tonsils.
Adenoids.

SUGGESTIONS TO TEACHERS AND MEDICAL INSPECTORS FOR THEIR AID IN IDENTIFYING DISEASES OR DEFECTS

DIPHTHERIA.—Nasal diphtheria of a mild type without constitutional disturbance is one of the most important factors in causing the spread of the disease. A thin watery nasal discharge which irritates the nostrils and the upper lip should always be regarded with suspicion. Any hoarseness or thickness of the voice should cause an examination of the throat. If the tonsils are enlarged, if the mucous membrane is congested, if there is swelling of the palate, a culture should be made. These symptoms precede diphtheria.

SCARLET FEVER.—A sudden attack of vomiting, redness of the throat, headache, and a rise of temperature would warrant the isolation of the child. Any peeling of the skin should be regarded with suspicion. If there are any breaks in the finger tips, if on pressing the pulp of the finger tips there is a white line at the juncture of the nail with the pulp of the finger, particularly if this occurs on the majority of the finger tips, the child should be excluded from school.

MEASLES.—Running from the nose and slight intolerance of light may call for the examination of the mucous membrane of the mouth for Koplik's sign. Koplik's sign, so called, is the presence on the lining membrane of the mouth near the molar teeth of minute pearly white blisters without any inflammation around them. There may be only two or three of these blisters and they may escape detection if the patient is not carefully examined in a good light. These blisters are certain forerunners of an attack of measles.

MUMPS.—Any swelling or tenderness of the glands situated behind the angle of the jaw should be looked upon with suspicion. A very frequent symptom is swelling inside the mouth opposite the second upper molar tooth.

WHOOPING COUGH.—A persistent paroxysmal cough frequently accompanied by vomiting, no matter whether there is a distinct whoop or not, is indicative of whooping cough.

CHICKEN POX.—A few black crusts scattered over the body are evidences of an attack of chicken pox.

SCABIES (ITCH).—Small pimples caused by an animal parasite which burrows in the skin. The pimples may be noticed on the backs of hands, especially the spaces between the fingers, on arms or the whole body; seldom seen on the scalp or face. Itching and scratching are pronounced and are more intense when patient stands near a hot fire or about the time of disrobing at night.

PEDICULOSIS (LICE).—The irritation caused by vermin leads to scratching, which in time causes an inflammation of the skin of the neck and scalp. The condition is most easily detected by looking for the eggs (nits), which are always stuck onto the hair and are not readily brushed off.

RINGWORM.—All ringed eruptions upon the skin should be examined for ringworm, a vegetable parasitic skin disease.

IMPETIGO.—A disease characterized by large or small flat or elevated pustules or festers upon the skin. They usually appear on the face, neck or hand, and occasionally on the scalp. The disease is contagious and is often spread by towels and things handled.

Bone Disease.—Spinal curvature should be suspected when one shoulder is habitually raised or dropped, or when the child leans to the side or shows persistent round shoulders. Complaints of persistent "growing pains" or "rheumatism" may be the earliest signs of serious disease of the joints.

The Eyes.—The teacher should call to the attention of the medical inspector any child having redness of the eyes with sensitiveness to light, discharges from the lids, or a crusted condition about the eye lashes.

"Vision tests should be made for all those children who habitually hold the head too near the book (less than twelve to fourteen inches); those who frequently complain of headaches, especially in the latter portion of school hours; and those in whom one eye deviates even temporarily from the normal position. Habitual scowling and wrinkling of the forehead when reading or writing; twitching of the face; inattention and slowness in book studies in a child otherwise bright, are symptoms indicative of trouble with the eyes, and should call for their testing. (See method for testing, page 22.)

Ears.—"All cases where there is running from the ears, or if there are crusted patches on them, should be reported. Children who are slightly hard of hearing, sit with their mouth partially open, which gives them a somewhat dull expression. They hear questions imperfectly, hence are slow and often stupid in their answers, since they try to conceal the hardness of hearing." The hearing test should be applied to such children. (See method, page 23.)

Nose.—If there is a discharge from only one nostril, a foreign body in the nose should be looked for.

Adenoids.—In cases of chronic nasal obstruction, as evidenced by mouth breathing, snoring, continual post-nasal catarrh or recurring ear trouble, the presence of adenoid growth (third tonsil) should be suspected and the child referred to a specialist for examination and treatment.

Enlarged Tonsils.—With recurring attacks of tonsilitis, enlargement of glands in the neck and deafness, suggest the need of having the tonsils examined by the family physician as to the propriety of removing the tonsils.

Teeth.—"Cavities in the teeth are centers of infection, causing unclean mouths which promote the growth of disease germs. Pus from diseased teeth seriously interferes with digestion and poisons the system. It causes a lowering of vitality and renders mental effort difficult." Children should be taught to care for the teeth. Inspection of the teeth by a dentist should be made at least once in six months.

OTHER GENERAL SYMPTOMS AND WHAT THEY MAY DENOTE.

Emaciation (Loss of Flesh).—This is a manifestation of many chronic diseases and may point especially to tuberculosis or hookworm disease. By applying to the writer or to the State Laboratory of Hygiene the teacher can have a free test for hookworm disease made.

Pallor.—Pallor usually indicates poverty of the blood. Girls about the age of puberty often show it. Associated with puffiness of the face it may indicate kidney disease or hookworm disease. It is seen in chronic malarial cases.

Shortness of Breath, if not associated with anemia, suggests heart disease. Associated with coughing, it may point to lung trouble.

Swellings of the Neck, where acute and not associated with mumps, suggests some throat affection. If chronic they suggest tuberculosis.

Flushing of the Face, if not caused by violent exercise, suggests fever, and should be reported.

Any Kind of Eruption, especially if accompanied by a rise of temperature, should be reported immediately to the physician and the child sent home until allowed to return by the medical inspector's ruling.

Frequent Requests to Go Out may indicate trouble of some sort with the bowels, kidneys, or bladder.

Nervous Spasms or Convulsions should be referred to the medical inspector. Feeble-minded children should be sent to the State school provided for this class of unfortunate children.

Note—These descriptions were condensed largely from "Medical Inspection of Schools," by Gulick and Ayres.

METHODS FOR TESTING THE EYESIGHT AND HEARING, FOR USE BY TEACHERS

The directions prepared by the Massachusetts State Board of Health and made a part of the laws of that State are simple, clear, and concise. They are as follows:

TO TEST THE EYESIGHT.

Hang the Snellen test letters (see Fig. 3) in a good, clear light (side light preferred), on a level with the head. Place the child twenty feet from the letters, one eye being covered with a card held firmly against the nose, without pressing on the covered eye, and have him read aloud, from left to right, the smallest letters he can see on the card. Make a record of the result. Children who have not learned their letters, obviously, can not be given this eyesight test until after they have learned them.

TO RECORD THE ACUTENESS OF EYESIGHT.

There is a number over each line of test letters, which shows the distance in feet at which these letters should be read by a normal eye. From top to bottom, the lines on the card are numbered respectively 50, 40, 30, and 20. At a distance of 20 feet the average normal eye should read the letters on the 20-foot line, and if this is done correctly, or with a mistake of one or two letters, the vision may be noted as 20/20, or normal. In this fraction the numerator is the distance in feet at which the letters are read, and the denominator is the number over the smallest line of letters read. If the smallest letters which can be read are on the 30-foot line, the vision will be noted as 20/30; if the letters on the 40-foot line are the smallest that can be read, the record will be 20/40; if the letters on the 50-foot line are the smallest that can be read, the record will be 20/50.

If the child can not see the largest letters, the 50-foot line, have him approach slowly until a distance is found where they can be seen. If five feet is the greatest distance at which they can be read, the record will be 5/50 (1/10 of normal).

Test the second eye, the first being covered with the card, and note the result, as before. With the second eye have the child read the letters from right to left, to avoid memorizing. To prevent reading from memory, a hole 1½ inches square may be cut in a piece of cardboard, which may be held against the test letters, so as to show only one letter at a time, and may be moved about so as to show the letters in irregular order. A mistake of two letters on the 20 or the 30-foot lines, and of one letter on the 40 or 50-foot lines, may be allowed.

Whenever it is found that the child has less than normal sight, 20/20 in either eye, that the eyes or eyelids are habitually red and inflamed, or that there is a complaint of pain in the eyes or head after reading, the teacher will send a notice to the parent or guardian of the child, as required by law, that the child's eyes need medical attention.

METHOD OF TESTING HEARING.

If it is possible, one person should make the examinations for an entire school, in order to insure an even method. The person selected should be one possessed of normal hearing, and preferably one who is acquainted with all the children, the announcement of an examination often tending to inspire fear.

The examinations should be conducted in a room not less than 25 or 30 feet long, and situated in as quiet a place as possible. The floor should be marked off with parallel lines one foot apart. The child should sit in a revolving chair on the first space.

The examination should be made with the whispered or spoken voice; the child should repeat what he hears, and the distance at which words can be heard distinctly should be noted.

The examiner should attempt to form standards by testing persons of normal hearing at normal distances. In a still room the standard whisper can be heard easily at 25 feet, the whisper of a low voice can be heard from 35 to 45 feet, and of a loud voice from 45 to 60 feet.

The two ears should be tested separately.

The test words should consist of numbers, 1 to 100, and short sentences. It is best that but one pupil at a time be allowed in the room, to avoid imitation.

For the purpose of acquiring more definite information concerning the acuteness of hearing, one may have recourse to the 512 v. s. (vibrations per second) tuning fork and the Politzer acoumeter.

For very young children a fair idea of the hearing may be obtained by picking out the backward or inattentive pupils, and those that seem to watch the teacher's lips, placing them with their backs to the examiner, and asking them to perform some unusual movement of the hand, or other act.

The results of the examinations are recorded by the room teacher on double sheets, having spaces for recording the results of the examination.

PHILIPPINE ISLANDS

DEATH RATE FROM HOOKWORM DISEASE.

Hookworm Disease and the Death Rate.—Population of the Philippines at time of American occupation is estimated at about 6,500,000; estimated death rate at over 50 per 1,000. At Bilibid Prison the death rate under lay management was 238 per 1,000. The prison was placed under the management of the Bureau of Health. The usual sanitary measures reduced the death rate to 70 per 1,000; here it stopped and resisted further efforts. All prisoners over 3,500 were examined for intestinal parasites; infected, 84 per cent; infected with hookworm disease, 52 per cent. After treatment death rate fell to 13 per 1,000, where it has remained up to the time of the report of 1909, or more than a year.

Note—Taken from 1911 reqort of the Rockefeller Sanitary Commision which cites as authority the report of Dr. C. L. Cole, Military Surgeon, Carlisle, Pa., 1907, V. 21, p. 298.

PREVENTIVE MEDICINE AMONG OUR YOUTH

By C. F. Strosnider, M.D.,
District Director of Sanitation, North Carolina State Board of Health.

The management of the child from infancy to the age of 16 years is the period of phenomenal development, and it is during this period that the foundations are laid of those factors which make most for success in afterlife—a well-developed body, sound health and a good digestion. In so far as these fall short of the normal, just so far does the individual miss his full effectiveness in the world's work.

The loss to the State of North Carolina in earning power from preventable diseases, such as tuberculolsis, typhoid fever, and hookworm, is enormous, even though we are already in possession of prophylactic measures of everyday medicine which, if conscientiously applied to each member of the community, would produce incalculable results.

Few will deny that the recent victory of Japan over Russia, which was up to this time thought to be the peer of any nation as regards army efficiency, was due to Japan's sanitation. Russia lacked that fundamental which so many sections of our State are deficient in today, and that is the application of the principles of sanitation. Japan taught the world the most practical and demonstrative lesson ever enunciated in sanitation. War records previous to the Russo-Japanese War showed that equally as many, and ofttimes more, men succumbed to disease as to bullets.

So long as it is considered good business policy to study and apply devices which make labor more eeffctive, there is nothing vague or visionary in applying to the future laborer health-saving devices which will make him physically and mentally fitter for his work.

Since the foundations of a sound physique are laid in infancy and childhood, and if neglected can not be rebuilt, we have a problem worthy of our most earnest consideration. When we consider the cost of living out of proportion to the increase in wage we have a condition which enhances rather than lessens these hereditary and congenital weaknesses which cause many deaths in early infancy.

The question of hygiene and sanitation is an educational one which will take much time to get firmly fixed in the minds of our good people.

We must make it plain to our people that no man has a right so to keep his house or so to live his life in a civilized community as to jeopardize his neighbor's health or happiness. Again, the duty of keeping clean in a physical sense is as high as that of moral cleanliness.

Is it not infinitely wiser to prevent the pollution of our drinking water or food than to fight the result of that pollution, as is the case with typhoid fever gotten by drinking dirty surface water or eating food polluted by flies which have come in contact with a typhoid fever case?

Again, is it not wiser to prevent soil pollution by using sanitary privies and thereby eradicate hookworm disease, which at present exists in the central and eastern part of our State to the extent of from 36 to 58 per cent, than to allow this easily preventable disease to go on sapping the life-blood out of our beloved children, dwarfing them mentally and physically for life, and in numerous cases, directly and indirectly, by other diseases, causing death?

Shall we not vaccinate all our people at a cost of 25 cents each, rather than leave some hundreds to die annually and other thousands to be branded with scars, a living shame to the community?

Would it not be wise to prevent stagnant water around our homes and thus not have a mosquito hatching place, and screen our home at a small cost against the mosquito, which causes malaria or bilious fever, than to allow this pest to enter our homes and cause long illness and ofttimes death?

Then we must start with the little ones, and after seeing that their mothers are instructed in the hygiene and clothing, remove the notion that the children must of necessity have measles, whooping-cough and hookworm disease by showing them that these diseases are ideal foundations on which to build future woe in the shape of consumption.

The best way to fight consumption or any other disease is with a sound body; the boy who would grow up to be a man of affairs must have sound lungs, stomach, eyes, ears, teeth, and good muscular development.

Every school in the State should have a medical supervisor or inspector to inspect the eyes, mouth, ears, and general condition of all children in attendance, in order that disorders may be detected at a time when they could be cured. As an example cross-eyes, detected early, can be cured; ear trouble, detected early, can be cured; diseased tonsils, removed early prevent rheumatism and poor health. Hundreds of our friends are today going through life cross-eyed, or blind, near or far-sighted, or deaf, or dwarfed mentally or physically from hookworm disease, as a result of not receiving attention at the proper time.

For the advancement of so important an issue, let us place the far-reaching and lasting good of this work before our lawmakers and insist that they at least appropriate as much for the protection of their wives and little ones as for that of their swine, cattle and poultry.

Shall we make preventive medicine a very real power in our State, or shall we be content to consider it a side issue?

CASES OF PHYSICAL DEFECTS REPORTED

By M. M. Saliba, M.D., Ph.D. Wilson, N. C.

Case No. 106.—A girl, eight years old, came to me with the following history: After reading for ten or fifteen minutes her eyes began to smart, the print became blurred, the tears flowed over her cheeks, and frequently she complained of frontal headache. After a short rest she could read again with apparent comfort, but the symptoms of fatigue reappeared in shorter intervals and prevented the continuance of further study. On examination I found that she was suffering from far-sighted astigmatism with all its characteristic symptoms. After the proper treatment of relieving the irritation and correcting the astigmatism she resumed her studies without further trouble or discomfort, and all previous symptoms disappeared.

Case No. 282.—A girl, eleven years of age, came to me with the following history: She saw distant objects badly and near objects well; complained of pain in her eyes; fatigue and intolerance of light, with a state of irritation; saw black spots floating about. On examination I found that she was suffering from near-sight—myopia. After the proper treatment and correction she followed her studies without any suffering. Both of these cases are of about two years' standing and neither of them has suffered since.

I have found that children suffering from defective vision, defective hearing, or defective breathing are great sufferers of mental fatigue, which is relieved as soon as their defective vision, hearing, or breathing is corrected.

Sanitary science can have no more important or fruitful field of application than is presented in our educational institutions. When we consider that the vast army of students is composed of those to whom the destiny of the nation is to be speedily committed, it is obviously important not only that their mental and moral training should be wisely conducted, but that great care should be exercised to avoid physical degeneracy during the years of school life, which are also the years of physiological growth.

Dr. E. Reid Russell, Asheville, N. C.

Common cases, I could give you hundreds. What a pity that these little people should suffer so needlessly.

Case No. 1.—Master L., age 14; schoolboy. He is unable to keep up with his class; is very dull in all his school work. As his vision was good his parents thought him mentally defective. It was for headaches that he was brought to me. After thorough testing of the eyes, under atropin, glasses, were given. Result: Patient returns with a good report from his teacher, doing fine work at school; and he tells me he has had no more headaches and can keep awake in the afternoon and study at night. All children should have their eyes carefully examined under belladonna before entering school. If not, they may be seriously handicapped in their work and labor against great odds, and often are considered mentally incompetent.

Case No. 2.—Little Miss M., age 12; schoolgirl. Unable to see blackboard; holds all reading matter very close to the eyes; squeezes the lids together when she looks at distance. Patient is sallow and anæmic; far from strong. Takes no interest in anything but reading and sewing.

This is a case of short sight and is not so common as the first case. This condition comes on about the eighth year and remains stationary or increases in amount, giving rise to that dangerous trouble of progressive myopia. The cause is poor lighting and too much use of the eyes for near work. After a thorough testing of the eyes under atropin glasses were ordered. Result: A new and happy girl. She could not only see all that was on that dangerous blackboard, but could see the beauties of the world as well.

Case No. 3.—Master L., age 9. Mouth-breather; narrow, contracted chest; catches cold easily; sallow; anæmic; poorly nourished boy with enlarged glands in the neck, growing weaker even under the best of care. Earache more or less since he was two years old; a foul discharge from both ears; very deaf. Examination shows enlarged tonsils, also a mass of adenoid tissue. These were removed in their entirety. Result: Two weeks later there was no discharge from the ear; hearing very much better. Two years later: Patient strong; hearing about normal; has not been ill since the operation.

If the tonsils are only partially removed they may continue to give trouble. Same may be said of the adenoids. The earlier the operation is done the better to prevent deformity of the upper jaw and irregularity of the teeth, as well as the other symptoms.

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THE PRESS AND PUBLIC HEALTH WORK

No greater single agency for the advancement of public health education exists, than is found in the press of this State. Nor is there to be found anywhere a class of men more willing to assist in the uplift and upbuilding of their own community and of the State than the editors and managers of these newspapers.

During the last eight or nine months practically every one of the leading daily, weekly and semi-weekly newspapers and other publications of the State have from time to time been carrying more or less public health information in their columns. From the best available information it appears that something like 160 papers have been supporting this campaign for better health, happiness, and efficiency. The total subscription enrollment of these papers approximates 475,000. It would seem that there can scarcely be a home in North Carolina into which such health information has not found its way. If the total amount of health matter used by these papers in the last eight months were joined end to end, it would form a newspaper column approximately 161 miles long.

It is comparatively easy to compute the total amount of such printing done, but who can ever estimate the amount of good this is bringing to the people of the State? The great flood of inquiries for literature, bulletins and further information received at this office serves as a testimony or index to the eagerness with which the public reads such items. This is particularly noticeable when the papers advise their readers that certain health literature, bulletins and pamphlets can be obtained at this office.

If the newspapers and other publications of the State continue in the future as they have in the past, the public will soon know the cause and will apply the remedy to many of the diseases and ailments affecting the life, health and efficiency of individuals and communities, which heretofore were supposed to be the dispensations of a beneficent Providence. Furthermore, it will be only a question of time until the public will demand the enactment and enforcement of such laws, State and local, that will look to the better safeguarding of the State's greatest wealth—the health of her citizens.

W. H. B.

The pedigreed dog is registered at birth—why not give the sweet little baby an equal chance?

'Tis a wise community which places community health above all other community possessions.

PROGRESS IN MURPHY

What town with a population of 1,100 is making greater strides towards the betterment of its health conditions than Murphy? What town is more wide awake to its surroundings? Note what Murphy has done during the last two years.

It has installed a gravity water system sufficient to supply a city of 25,000 inhabitants; it has built twelve foot concrete sidewalks in the business part of town and six foot sidewalks in the residential portion; it has erected brick fireproof buildings of which any city could be proud; and it is now constructing macadamized roads for a distance of from five to ten miles in every direction from the town.

Murphy has recently called a mass meeting led by the Woman's Club and the Board of Trade, and urged the Health Department to push to a finish everything for its betterment. As a result a "clean up" campaign was inaugurated. This campaign lasted three days and every man, woman and child participated in the good work. Prizes ranging from two to five dollars were awarded the children collecting the most rubbish.

All people residing on the sewer lines will be required to connect with sewers, and those living off the sewer line and using surface privies will be required to screen and make them "fly tight." Owners of stables will be required to dispose of manure every ten days.

The password in Murphy is "Grow or go."

DUTY OF THE COUNTY MEDICAL SOCIETY TO PUBLIC HEALTH

Annual Address of T. I. Fox, M.D., President, before the Randolph County Medical Society.

That the health of the people of any nation constitutes its greatest asset, needs no argument. It is a well established fact. This being so, it is clearly the duty of every citizen to promote the attainment and also the preservation of this greatest blessing, not only in his own person, but also in his neighbor.

Since the prevention of disease is better than its cure, even if a cure could be counted on with certainty, all nations have provided for the promotion of good health. Along this line we might learn a lesson from the "Heathen Chinee," who pays the doctor to keep him well. When he gets sick the pay stops.

The methods of preventive medicine have advanced and expanded at a marvelous rate during the last seventy-five years. They have been so frequently and so widely published that every one is familiar with them, and the State has, by legislation, ordered them carried out. The responsibility for seeing that the health regulations are carried out rests first upon the health officer of the town or county.

But that does not excuse the individual physician. One of his duties is to notify the health officer within twenty-four hours of the presence of any infectious disease; by doing so, the spread of such diseases is to a great extent prevented. I wish to urge upon each member of our County Society the importance of strictly observing this law. Each physician should instruct the laity that it is their duty to coöperate with the physician in this matter. So often the neglect of this law causes an epidemic of contagious diseases, especially among children.

According to the act of the last Legislature, each physician should act in the capacity of teacher, preacher, lord of all, and health superintendent as well.

Next in importance is sanitation. We can not be too explicit on this subject. Neglect of this often causes needless sickness, pain and death. A great many cases of typhoid fever and other diseases might be prevented by the observance of a few simple sanitary rules. Our responsibility is not limited to the individual member of the family who is sick. No physician should neglect to observe the proper precautions to prevent the spread of communicable diseases, and should earnestly advise the family of their importance. In every instance it is his duty to provide such disinfectants as will prevent the spread of the disease.

On sanitation rests the success of the special crusades against the hookworm disease and tuberculosis that have been begun in our State. I would urge upon each physician in the county that it is his duty to coöperate with the leaders who have this great work in charge. While our county is not so infected with hookworm disease as the eastern section, still we have a few cases.

Tuberculosis is killing more people than any other known disease. Many of these deaths could be prevented by careful sanitary measures. Whenever a doctor is called to see a case of tuberculosis he should tell the family the real nature of the disease and instruct them how to arrest the progress of infection. Most people will appreciate and heed his advice, while some few will take offense and call another physician. Such cases should not hinder the physician in the performance of his duty. He owes a duty to his community and State in lending his aid and support to all movements for promoting the health of the people, and the man who is a good citizen as well as a good doctor, will do this.

In conclusion, I would suggest that our County Society can promote public health:

(1) By rigid enforcement of the quarantine laws. The quarantine law is comprehensive, and if not enforced it is not the fault of the law, but of the individual physician and the officer in charge.

(2) We, as a society and as individuals, should teach the people that vaccination prevents smallpox. Until we have complete vaccination we can not hope to be rid of this scourge to public health.

(3) Preach sanitation in season and out of season; carry on the war against flies and all other filth. Urge people to observe "clean-up day."

Finally, "In union there is strength." By working together as a society, living up to the medical code of ethics, and observing the Golden Rule we may bring blessings on ourselves as well as promote the public health.

THE VALUE OF VITAL STATISTICS AND THEIR RELATION TO PUBLIC HEALTH WORK

By Warren H. Booker, C.E., Assistant Secretary.

Vital statistics consist primarily of the compilation of official records of the greatest events in the lives of men. Who will deny the importance or value of official records of births, stillbirths, marriages, divorces, sickness, and deaths? Careful analyses of such records serve as the only basis on which we can determine at short range the movements of mankind.

History, it is true, records the past general movements of man, but vital statistics indicate the movements or actions that are taking place at the present time. Careful analyses of these actions will indicate the cause of the movement, as from effect to cause. Furthermore, in dealing with these movements, after once determining the operating cause, we can readily measure, in a comparatively short space of time, the effect of any line of action and its efficiency to facilitate or retard such movements or actions.

To briefly illustrate: Some time ago France found that her death rate was equaling if not exceeding her birth rate. This indicated, if such conditions long continued, the early fall of this great nation. A great part of this terrible economic loss to the nation was found to be among the children. Therefore, to save France a strenuous effort was made to reduce the general death rate, and particularly to reduce the infant death rate by better education of the mothers in the matter of caring for their children. The present forecast is that in all probability the fall of that nation from this cause is being successfully forestalled.

Vital statistics constitute our national trial balance sheet. They show our debit and credit items, our present worth and our profit and loss accounts. From such facts alone our national general managers can intelligently decide upon the lines to push and the lines to drop.

Vital statistics constitute the most important branch of statistics bearing upon the resources of a nation. They deal with the nation's most vital and valuable assets—the life and health of its people.

Strange indeed that we require private and official record of so many trivial matters, and yet neglect these weighty things. It is an everyday occurrence for men to make an official record before a notary public of the fact that they have told the truth. It is absolutely necessary that you make official record of your residence, age, nativity, etc., before you are allowed the right of suffrage. You can not buy a foot of ground unless you have the transaction recorded, nor can you pay off the mortgage and have your property released without making due record of that fact. It is frequently impossible to secure a pint of corn extract from the corner druggist without the official sanction of your physician. From the freshman class meeting or the literary society in the high school to the national Congress, no action, motion, resolution, or speech goes by without full and proper record. Yet birthdays are frequently a matter of tradition, and funerals are recorded, if at all, only on tombstones.

Such carelessness may apply to man, but not to plants and the lower animals. Every Berkshire, Hampshiredown, or Hackney, every Scotch collie, Leghorn or Angora worthy of the name has an ancestral record that, from point of completeness of its genealogy, can be rivaled only by our Colonial Dames. All this is true, and yet in North Carolina human beings, made in the image of God and endowed with an immortal soul, are born, live and die without any official and frequently with no private record of the facts. Does it seem right and proper that our State and national governments should expend hundreds of thousands of dollars on bureaus of animal industry, in combatting, studying and gathering statistics on cattle ticks, hog cholera and sheep rot, and scarcely a cent in studying or gathering statistics on preventable diseases of man?

We deem it wise to maintain a Bureau of Plant Industry, to collect accurate and detailed crop reports and statistics; but where can we learn if our last year's crop of babies was above or below normal? We have studied and mapped out well defined areas, certain of which we call the cotton belt, the corn belt, the wheat fields, and so on. But did you ever see a map of this country, particularly of North Carolina, showing the areas of greatest total mortality or the greatest mortality from tuberculosis, typhoid, pneumonia or pellagra? We have well equipped weather bureaus that furnish us temperature conditions, velocity of the wind, atmospheric pressure, amount of precipitation, sunshine and humidity. Why not register our vital statistics so that we might know our national temperature and pulse and issue a morbidity forecast?

VALUE OF VITAL STATISTICS TO THE INDIVIDUAL.

So much for vital statistics in their relation to the State. Let us consider briefly just a few of the values of birth and death registration to the individual. Birth registration and certificates should be, and ultimately will be, a requirement for the right to attend school, to work in factories, to marry, to vote, to pay taxes, to hold office or other positions of trust, to untangle legal difficulties, to obtain life insurance, to enter into contracts and partnership, to fix the responsibility for crime and misdemeanor, to establish legitimacy, to enter into and to exempt from military service, jury service, and so on. In fact, there is scarcely a relation in the race from the cradle to the grave where official birth certificates would not be of inestimable value. The only reason why we do not appreciate this fact more is because we have never had such registration.

Death certificates are, and will be, of even greater value. In paying life insurance claims, fixing legal questions, pensions, personal liability and business contracts, indisputable legal proofs of death are necessary. When certificates are made out for all deaths and a physician ascertains the medical cause of death, a great number of deaths from poisoning, homicide, and particularly from infanticide, will be detected, and such crimes will decrease. Epidemics and infectious diseases could also frequently be checked if a physician examined every case of death and filed a death certificate. As it is now, many deaths are neither attended by a physician nor investigated by a coroner.

EDUCATIONAL VALUE OF VITAL STATISTICS.

Vital statistics are of great educational value. Such statistics form one of the best means of studying the negro problem in our State. True, we can go to the Census and find there evidences that the negro is not increasing so rapidly as the white man, but nowhere can we learn if the negro birthrate is decreasing, if his average length of life is being shortened, if he is the victim of any special diseases (save possibly tuberculosis), or if he is increasing in certain parts of the country and decreasing in others. Definite answers to these questions, and others, affect tremendously society at large. As it is, we grope in the dark.

The educational value of vital statistics is also of great importance to medical science. For the best development of this science the medical profession should be placed in full possession of all facts regarding the numerical relations of diseases and deaths to age, sex, nationality, race, social conditions, occupations, and locality. Such facts can be supplied by vital statistics, and by vital statistics alone.

RELATION OF VITAL STATISTICS TO PUBLIC HEALTH.

While the importance of vital statistics for the reasons already given can not well be overestimated, yet by far their greatest value is to be found in their relation to public health work. Vital statistics are to the sanitarian what the indicator card is to the engineer. They show the maximum and the minimum pressure of every preventable disease. They show the relation of varying lengths of stroke and foot pounds of energy in the conflict against these diseases as the cycle of the ages rolls on. And, finally, they show the brake horsepower developed and they plot the efficiency curve of every kind of health work.

AN INDEX TO THE KIND OF WORK.

Our present methods of public health work are of necessity crude and erratic. The work is done "here a little, there a little," without the guiding hand of facts and figures to indicate the efficiency of any particular line of work. If comparative vital statistics were available it would soon be possible to determine upon the line or lines of least resistance, and we might fight it out along those lines first. Or it would certainly indicate the economic limit, beyond which to endeavor to drive any particular death rate lower would be to expend more money than the reduced death rate is worth in capitalized human lives. What health officer can intelligently attack the greater problem of public health in his town, city, county or State without knowing where to make the attack? As it is, who would dare say whether the present work and expenditure in the fight against tuberculosis would net a greater saving in lives, health, happiness, and efficiency than similar work against typhoid or malaria, or some other disease? Under the present conditions, who can intelligently apportion the economic amount that should be expended for any one purpose?

AN INDEX TO THE EFFICIENCY OF THE WORK.

Then again, vital statistics furnish us the only accurate means of determining the relative efficiency of different methods of public health work. For example, how can you know definitely through which of the several means of attack tuberculosis can be most efficiently combatted in North Carolina? Is it by means of visiting nurses or dispensaries, public lectures or literature, sanatoria or by some other means? Intelligent answers to these and kindred questions can be found only by means of comparative vital statistics. Certainly throughout the one hundred counties and the twenty or twenty-five sizable towns in our State, each working under its own health officer, all the different methods of combating any particular disease will be tried out. From the vital statistics of this varied work will result a wealth of public health knowledge for this State, and peculiar to this State, such as we should never be able to obtain otherwise.

Now, the public is always interested in and it has a right to know how its affairs are administered. This should be especially true of that department having charge of the State's greatest wealth—its health. In the not far distant future the work of the sanitarian, like that of the designing engineer, will be judged not by the surface polish, paint and nickel plate, nor by the grandstand, spectacular plays, but by the indicator cards of vital statistics that he is able to produce. In other words, he will account for his stewardship in hard, cold facts and figures. Instead of being asked for voluminous reports from this department and that, he will be asked to show the yearly death rate for his town, city, county or State, and to make comparisons of total death rates and of the several death rates from preventable diseases. That will be report enough. His story will be told, and little comment will be needed.

Let us not forget that "competition is the life of trade." This is true in many other things besides business. With accurate vital statistics, public health work in the matter of reducing death rates and furnishing low morbidity reports will of necessity become, to a greater or less extent, competitive between certain towns, counties, and even States. This is no idle fancy. This state of affairs is already in progress where vital statistics are kept. Would that we had more of it. The sooner we get politics out of public health work, and the sooner we get such competition based on vital statistics into public health work, the better it will be for the public.

The full value of vital statistics will not be realized the first year such registration is established. Nor will all the benefits be appreciated in five or ten years. Their value will increase with age. The point, therefore, to be borne in mind is that the sooner we begin registration of these statistics the better.

THE PRESENT LAW.

A word now in regard to our present vital statistics law and its application and relation to public health. In 1909 a bill was passed requiring the registration of deaths in towns having a population of one thousand or more. Not a cent was provided in this law for the payment of the overhead charges of the central office. The first year in which this law really became effective was 1910. The total population affected in the State was 350,000, or less than one-sixth of its entire population. In 1911 this law was amended, making all towns having a population of five hundred or more registration towns. Still no direct financial means were provided for carrying on the work of collecting and tabulating these statistics. No valuable returns, of course, can be secured from such towns before 1912.

PRACTICAL APPLICATION OF THE LAW.

Now, by a careful comparison of the total death rates and the preventable death rates in our registration towns with similar returns from the other registration towns in this State and elsewhere, we are able to point out to the town authorities, where certain death rates are high, the facts and figures in the case, and to give them specific information in regard to remedying the conditions producing these excessive death rates. This work is being accomplished with considerable success, considering its newness and its limitations, and bearing in mind the fact that no special provision was made for carrying out this law to its fullest extent. Enough, however, has already been accomplished to satisfy those acquainted with the work with its immense possibilities. In the meantime, it will be the endeavor to accomplish all possible with our present law, and to await with patience the dawn of a better day when North Carolina may take her place as a total registration State along with such progressive States as Pennsylvania, Massachusetts, Ohio, New York, and lately our sister State Virginia.

A WORKING PLAN FOR AN ANTI-FLY AND ANTI-MOSQUITO CAMPAIGN

By Warren H. Booker, C.E., Assistant Secretary.

A great deal has been said and written against flies and mosquitoes, and the half has not as yet been told. But, with shame we must admit that a great deal more has been said and written than has actually been done. Ninety-five people out of a hundred know that flies and mosquitoes are dangerous pests and nuisances. They know that flies carry filth and disease germs and that mosquitoes transmit malaria, and furthermore, that either one or both can be prevented to a very large extent. Furthermore, most people know how to prevent them. But do they prevent them? No, after listening to a public health talk or to a sermon or lecture on sanitation, or after reading one of the hundreds of magazine articles and newspaper articles of the day on flies and mosquitoes and cleaning up, they return home, forget their good impressions, and permit empty bottles, old tin cans and filth to continue day after day and week after week, while their neighbors do the selfsame thing, and mosquitoes and flies multiply as by magic. So what are you going to do about it? That is the question to which we address ourselves.

THE SOLUTION.

An easy solution to the fly and mosquito question has not as yet been found. Nor do we propose one now. What follows is intended largely for cities and towns, where in certain sections the local spirit of community betterment is somewhat in advance of the same spirit, in the city council chamber. It is, therefore, intended to be carried out largely by volunteer community effort. The one we propose means work, hard work, persistent work, perhaps discouraging work if tact and good judgment are not employed; at all hazards, *work,* and lots of it. The solution consists essentially in a strenuous campaign of popular anti-fly and anti-mosquito education throughout a city or town or certain blocks or parts of a town most likely to yield results—usually the best residential sections. This educational campaign should be followed by a canvass for householders who are not only intelligently informed as to the dangers of these pests but who are also willing to go on record and to do their part in a well planned and organized, concerted community effort to prevent flies and mosquitoes. After this will come the real work—the constant, persistent, everlasting grind of making householders keep their promises and do their part by keeping their premises scrupulously clean. This last and most important feature of the plan is accomplished largely by means of a paid inspector or sanitary officer, appointed by the local board of health or by the county superintendent of health and paid in full or in part by this board or by the citizens receiving the benefits of the inspections. The cost to each householder should not be over from two to four cents a day for the fly and mosquito season. The duties of this sanitary inspector should be to make careful weekly inspections of all streets, alleys, sewer manholes, catch basins and stagnant ponds or pools in which mosquitoes might breed, and apply kerosene or other larvicide if they are not drained. He should also examine all roof spouts at least once at the beginning of the season and again just after a rain, to see that they drain perfectly and afford no place for mosquitoes to breed. He should also make a careful examination of all premises to see that they do not contain any empty bottles or old tin cans, manure, night soil, garbage or other filth in which flies and mosquitoes might breed. Much, of course, depends upon the inspector. He must be tactful, conscientious and able to command respect.

The appointment of this sanitary officer by the board of health will give him the necessary power and authority to make inspections, and the fact that the householders have pledged themselves to have the inspections made and that they are contributing toward this cause will give him all the moral support necessary. The mere fact of the existence of such an inspector has a great stimulating effect upon the householders in making them keep their premises in such a sanitary condition that the inspector will find nothing to call attention to on the occasion of his weekly visits. Flies and mosquitoes will find the situation extremely embarrassing, and the result is accomplished. The secret of the whole plan is prevention, prevention of flies and mosquitoes by preventing their breeding places. It avails but little to trap flies even in great quantities in midsummer or fall. There are always sufficient numbers left after trapping to be a menace to life, health and comfort, and, besides, those that are trapped have usually done a lot of mischief before being caught.

THE PLAN IN DETAIL.

The promotion of such a campaign will rest largely upon one or more public spirited citizens, who are willing to take up the work and who have sufficient resolution and perseverance to carry out the plan. Health leagues, business men's clubs, chambers of commerce, women's clubs, civic leagues and boy scouts are excellent organizations to carry forward such movements.

One of the preliminary steps in such a campaign is, of course, to make sure that there is some person available who is capable and willing to undertake the work of sanitary inspector for the campaign. Too much care and forethought can not be taken in this matter to see that a good, tactful, honest, conscientious man is selected; one whose judgment is good and whose requests and suggestions will be respected, and who knows at least the rudiments about the habits and dangers of these pests.

In planning such a campaign, great care and discretion should be used in outlining the territory to be covered. If no ordinances exist which tend to regulate livery stables, privies, and other fly nuisances, and it seems likely that the keepers of these flybreeding places would not readily consent to clean up and remove or screen their filth after an educational compaign such as herein outlined, their places should, if possible, be excluded from the anti-fly territory. As a rule, the best residential sections should be chosen, as they yield the best results with the least labor. Be wary about choosing a whole town the first year, unless the town authorities are willing to coöperate or undertake the campaign themselves. Public sentiment, expressing itself in ordinances, may later make it possible to conduct such a campaign successfully throughout the entire town, but it is far better to have the campaign successful in a few blocks or in one or two wards than a failure throughout the entire town.

Remember that flies and mosquitoes do not, as a rule, go far from their breeding places. Not a great many flies go over two or three hundred yards from the place where they originated. This is particularly true if they have abundance of food and shelter at hand and if the fly accommodations are poor elsewhere. If, however, the reverse conditions exist they will travel long distances. Mosquitoes rarely go over one hundred and fifty feet unless carried by the wind. In fact, an ordinary city street is a good barrier against mosquitoes, and generally no mosquitoes and but few flies from outside sources need be expected inside the row of blocks adjacent to the fly territory, if the campaign within the anti-fly territory is being well carried out.

One of the first steps to be taken is to thoroughly post the telephone poles and other public places in the vicinity of the territory to be covered by the campaign with placards directed against flies, mosquitoes, etc. Such placards may be of local design, if desired. Anti-fly placards in reasonable numbers will be furnished free by the State Board of Health upon a request accompanied with a promise to securely post to good advantage all the placards requested and sent. In three or four days a small circular or leaflet giving the elementary facts about flies and mosquitoes and how to suppress them should be distributed in person to each and every householder in the territory in which the campaign is to be carried on, with a request that he read it carefully, as he will be called upon again in a few days to express his position in regard to the matters contained in the leaflet. The article entitled "Essential Facts About Flies" which appears elsewhere in this BULLETIN has been published as a separate pamphlet and may be obtained free in considerable numbers if assurance is given that they will be promptly placed in the hands of householders or otherwise used to the best possible advantage.

In the meantime, and in fact all through the campaign, efforts should be made to carry the work of education still farther by means of lectures on flies, mosquitoes, and sanitation in general. Laymen, doctors, local health officers, county superintendents of health, and ministers are usually willing and frequently anxious to give lectures on these subjects and to help along the good work. Moving picture shows can frequently be induced to run fly films. The National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second Street, New York City, issues a free special circular entitled "Motion Pictures Dealing With Health Subjects."

To add spice, zest and variety to the campaign, interest the school children in the work. Offer small prizes and honorable mention in the newspapers for the boy swatting or trapping the most flies in a given length of time. Offer similar prizes for the best screened residences in the anti-fly territory, for the cleanest homes, and for the houses having fewest flies. Complimentary tickets good for a week or a month at the moving picture shows make good prizes. Enlist all the various interests available. You may need them before success finally crowns your efforts.

Best of all, the local newspapers will be found more than willing to coöperate. More public spirited men than the newspaper men in your own town are not to be found in North Carolina. Give them the gist of the progress of the campaign as news items, and trust them to do the rest. Furthermore, the State Board of Health will furnish your newspapers with general anti-fly and anti-mosquito articles from time to time during the summer and fall. The progress of your campaign will furnish daily or, at least, weekly news items on which to work up nice stories and squibs calculated to arouse the lukewarm and the indifferent. Don't forget to advertise the moving picture fly films in the local papers and at public gatherings, possibly at churches. Remember that if you expect to make your campaign successful you can't get too many people interested or enlist too much aid. One of the greatest secrets in accomplishing a thing like this is an ability to interest other people in it and get them to help you. You will find enough for several willing workers to do. Divide the work. If possible have each person pledge himself to be responsible for a particular part of it; then see that he does his part.

In not more than three or four days after distributing the little pamphlets on flies and mosquitoes, take around among the householders some such petition as the one here shown:

ANTI-FLY AND ANTI-MOSQUITO PETITION.

We, the undersigned, believe:

A. That flies and mosquitoes are dangerous and annoying pests.

B. That to a very large extent they can be controlled and suppressed.

Furthermore, we, the undersigned, promise to lend our support to the work of controlling and preventing flies and mosquitoes for the remainder of the summer and fall:

1. By keeping our premises in a clean and sanitary condition.
2. By screening, removing or destroying all garbage, stagnant water, manure, and filth of every description on our premises, or so treating the same that flies and mosquitoes will be unable to secure food or to find a breeding place.
3. By contributing to the inspector of the anti-fly and anti-mosquito campaign not less than three cents daily (twenty cents a week or seventy-five cents a month) from the above date until November 1st, for the purpose of conducting an anti-fly and anti-mosquito campaign and employing the services of a sanitary inspector. It is understood that it shall be the duty of this inspector to thoroughly inspect and apply kerosene or some other larvicide to all stagnant water on adjacent streets, alleys and vacant lots each week, where the owner or tenants can not be induced to drain the same. His further duty shall be to make weekly sanitary inspections of our premises for the purpose of detecting the presence of any and all filth, stagnant water, or any other substance which, in his opinion, is accessible to, and might furnish a breeding place for, flies and mosquitoes.
4. By screening, removing or destroying all such filth, stagnant water or other substance found by said sanitary inspector which in his opinion is accessible to, and might furnish a breeding place for, flies and mosquitoes, according to his directions, provided the total expense for the same does not exceed $5.00.

It is to be understood that a public statement is to be made monthly in the office of the local board of health of .... of all funds received for this purpose and the disposal of the same.

It is to be further understood that should it at any time, for any reason, be inexpedient to have the sanitary inspector enter a certain room or rooms of our residences he shall be so advised, whereupon some one of the household shall immediately (except in case of sickness) make an inspection of the room or rooms in question and change all water in vases, pitchers, cuspidors, or other vessels, and ascertain if there is any other stagnant water or filth of any kind in which flies or mosquitoes might breed, and if such is found it shall be immediately screened, removed or destroyed.

NAME.	STREET ADDRESS.
....	....
....	....
....	....
....	....
....	....

* * * * * * * * * * * * * * * * * * * *

The more prominent and influential people in the district to be campaigned should be presented with the petition first, and later the doubting Thomases, or those least likely to be willing to lend their assistance.

It is also advisable to use two petitions. All householders willing to sign the regular form herein suggested should be permitted to sign it, and those not willing to sign this form should be presented with the same petition having the last four paragraphs struck off.

Immediately after securing the signatures of as many householders as possible, secure the appointment of the inspector and announce the date on which he will begin his duties. Make this date as early as possible.

Do not let the work stop at that. Encourage all the other auxiliary movements. Note the particular line or lines that are helping most. Push them hard. Remember the newspaper work. Interview numerous prominent citizens from time to time and secure opinions as to the success and effectiveness of the campaign. These interviews will make fine newspaper material. Then, if the enthusiasm will permit, enlarge the anti-fly district. Bear in mind continually that largely upon the success or failure of the campaign depends the action of your local authorities in passing ordinances regulating livery stables, hog pens, cattle barns, surface privies, etc., as well as enlarging the scope of the anti-fly and anti-mosquito campaign the following year. Endeavor to have everything work smoothly with the inspector and see that no serious friction is created as a result of his weekly visits.

Last of all, bear in mind, particularly if this is the first real public health movement your town has experienced, that the public eye will be continually and critically centered on this campaign. This movement should therefore mean infinitely more than merely suppressing the flies and mosquitoes from a portion of your town and perhaps saving the lives of a few babies during the summer. Upon the success or failure of this work will depend largely the success or failure of much greater work in the future. If success crowns your efforts here, it should be the beginning of some real civic improvements in your town.

GENERAL OUTLINE OF THE SANITARY INSPECTOR'S DUTIES.

The sanitary inspector shall make weekly inspections of all streets, alleys, roads, gutters, sewer manholes, catch basins and other public property in the territory or portion of the town in which the anti-fly and anti-mosquito campaign is being waged. When filth of any kind is found he shall call it to the attention of the proper persons and request that it be promptly removed. When stagnant water is found he shall either endeavor to have the pond, pool or hole filled or drained, or sprinkled with kerosene at the rate of half a pint to one hundred square feet. He shall pay particular attention to sewers and other places that are found damp at any time, or that are found to be the breeding places of flies and mosquitoes, and sprinkle the same with kerosene as above described.

The sanitary inspector shall make regular weekly inspections of all premises, the owners or occupants of which have signed one of the anti-fly and anti-mosquito petitions, or who residing within the campaign district, express a desire or willingness to sign such a petition or to have their premises regularly inspected. Such inspection shall consist of a thorough personal examination of all roof gutters and rain spouts at least once during the campaign season, and that within three days after the first rain or shower after the inauguration of the anti-fly and anti-mosquito campaign. When spouts or gutters are found to be clogged up or containing water, he shall clean them, and if the gutters are sagged so as to retain water he shall call it to the attention of the householder, who will either advise that a small drainage hole be made in the lowest place or that he will have the gutter repaired and placed in position so that it will drain. When the householder prefers to have the gutter replaced so as to afford proper drainage, the inspector shall inquire in regard to whether the matter has been attended to at his next regular inspection. The inspector shall carefully examine the entire premises inside and outside of all houses and buildings, except as provided in the petition signed by the householder, in which case he shall wait for the householder to make the inspection and report verbally to the inspector before leaving the premises.

The sanitary inspector shall make careful search for all manure, garbage, fecal matter, filth of any kind, or stagnant water, in which flies or mosquitoes might breed. When such is found uncovered or unscreened he shall call the same to the attention of the householder, and also make a written memorandum of all the objectionable features found on any premises. On the following regular inspection he shall carefully investigate to see if all objectionable items found on the previous inspection have been removed, screened, destroyed or otherwise disposed of. If no action has been taken he shall again call the attention of the householder to the possibility of a breeding place for flies or mosquitoes, and to the fact that his negligence, to a large extent, will defeat the aims and work of the campaign in that immediate vicinity, and remind him of the pledge or petition he signed. The inspector shall again make a note of the circumstances, and if the filth has not been removed by the time he makes his next weekly inspection he shall ascertain if the householder is willing to bear the expense of having the matter remedied, and if so, the inspector shall at once proceed to have it done in the cheapest manner possible and refer the charges to the householder. If the householder still neglects or refuses or is unwilling to remedy the matter at once or have it remedied, the inspector shall post a copy of his memoranda of the entire matter in the same public place in which the public accounts of this campaign are posted.

RECORD OF INSPECTION OF THE PREMISES OF

No.------------ ---------------------------------------St.

Week of Inspection	Payment		Memoranda
	Weeks	Months	
1	1	April	---
2	2	May	---
3	3	June	---
4	4	July	---

* *

ESSENTIAL FACTS ABOUT FLIES

By Warren H. Booker, C.E., Assistant Secretary.

Flies are the filthiest and most dangerous enemy of man. Every summer they kill more people in North Carolina than are killed during the entire year by murderers, lightning, storms, cyclones, mad dogs, poisonous reptiles, angry bulls and other vicious animals combined. How do they do it? By carrying the germs of typhoid fever, dysentery, infantile diarrhœa, tuberculosis, smallpox and probably hookworm and many other diseases to our food. In fact, the only objection to calling the ordinary houseflies "typhoid flies" is that it might leave the impression that typhoid is the only disease they carry, while in reality they spread the bacteria of all intestinal diseases.

LIFE HISTORY OF FLIES.

Female flies lay from one to four, or even five lots of eggs, and about one hundred and twenty eggs at a time. They always lay the eggs in filth of some kind. About ninety-five per cent of all flies are bred in manure. When manure is not readily available, the female fly lays her eggs in garbage, human excrement, decaying vegetable matter, slops, trash, rubbish or almost any other available filth. In early spring or late fall these eggs develop into full grown flies in from twelve to sixteen days, while in warmer weather it takes only about eight to ten days.

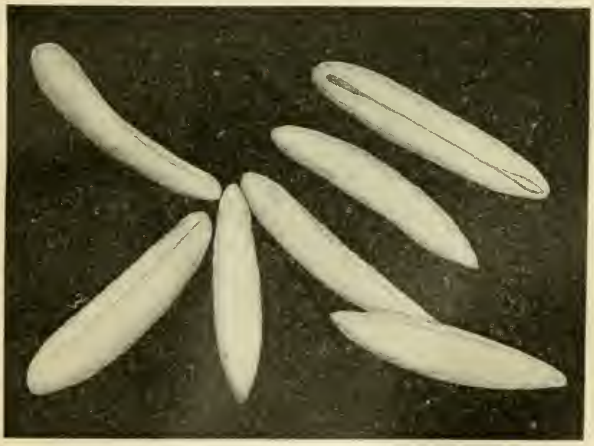


Fig. 1. Fly's Eggs much enlarged. (*After Metcalf.*)

Fly eggs are tiny white objects about one-sixth of an inch long. Figure 1 represents fly eggs greatly magnified. In warm weather these eggs develop into the larvæ or maggot state in about eight hours. See Figure 2. The embryo fly remains in the maggot state for about five days, burrowing around in the filth and feasting on it to his heart's content. During these five days he sheds his covering twice and emerges into the pupa or resting stage. From this stage the full grown fly emerges in about four to five days and sets out on his filth and death-dealing career. This makes the total period of development of the fly about ten days in warm weather. Under very favorable conditions as regards heat, moisture and filth, they may even develop in eight days. Flies do not grow after passing the pupa stage. Little flies sometimes observed are of a different kind from the ordinary houseflies.

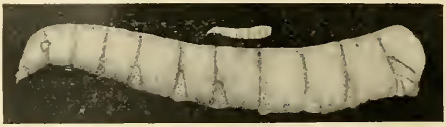


FIG. 2. Fly larvæ natural size and much enlarged. (*After Metcalf.*)

FLIES' HABITS OF EATING.

Immediately after hatching into a full grown fly, his first impulse is to feed. He usually gets his initial meal right at his birth palce. He is never particular about the kind of food he eats. It matters little to him if it is manure, garbage, human excrement or something else. He rarely establishes permanent quarters, however, at his birthplace. Shortly after birth he takes his initial flight to some near-by kitchen or dining room. Should screens at the windows and doors embarrass him, he is very willing to take a few meals at the open garbage pail while waiting his chance to get into the house.

Flies are prodigious eaters. They have been known to devour nearly half their weight of food at a time. Furthermore, they like to eat at very brief intervals during daylight hours. And here follows one of the most dangerous, as well as nauseating features about flies. Their digestive processes are extremely simple and the food they eat passes through their bodies with the greatest facility. Many substances eaten by flies pass through their digestive tracts unchanged by their weak digestive fluid. As a result, after a fly has dined on tuberculosis sputum or typhoid dejecta, analyses of the resulting fly-specks show the presence of the live germs of these diseases.

As might be expected, since flies are great feeders they deposit correspondingly large quantities of excreta. A single fly confined in a paper box has been found to produce fifty fly-specks in the course of twenty-four hours. The reason even more fly-specks are not visible is that they are largely liquid and frequently almost colorless. Many authorities now believe that there is far more danger from disease germs that pass through flies' bodies than from those that are entangled on their feet and legs.

THEIR LENGTH OF FLIGHT.

One of the most important things to know about flies is the distance they fly from their breeding places. Unfortunately, this is one of the things about which little definite information is to be had. The conclusions obtained from experiment and general observation indicate that if there is an abundant food supply at or near their breeding places they do not have a very great tendency to fly far from such a place. With favorable environments and poor accommodations abroad flies usually remain within a few hundred yards of their breeding places. Ordinarily they appear to leave their breeding places in all directions, like the rays of light from a lamp, so that the farther one goes from their original source the rarer they become. If on the other hand home comforts are poor for the fly and they find that elsewhere one basis of food supply and friendly shelter follows hard upon the other, they may leave their original breeding places for considerable distances. Under such conditions they have been known to go a half a mile or farther in search of food and shelter.

THE FLY AS A DISEASE CARRIER.

The only objection to the fly used to be because he was such a pest, a torment and an enemy to the comfort of mankind. This feature was particularly noticeable when one tried to read, rest, sleep or remain quiet in their presence. It requires no argument to convince any one that flies are pests.

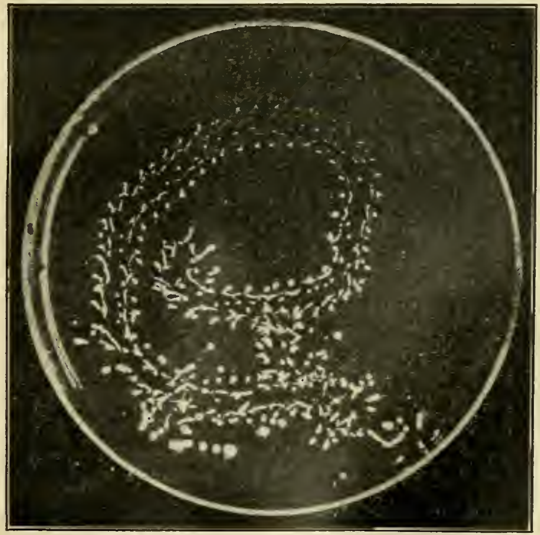


FIG. 3. Colonies of bacteria growing in footprints of a fly. (*Photo by Underwood.*)

Later we began to find out about his breeding places, his habits of life and the possibility of his carrying nauseating filth on his feet and legs from stables, garbage cans and privies to our houses, our persons and our food. Figure 3 represents a substance over which a fly was induced to walk. The substance was such that any germs which dropped from the fly's feet would soon grow large enough to be seen. In the figure each white dot represents a festering colony of bacteria that grew from the filth left in each footprint of the fly. Then it was that flies became disgusting almost to the point of being nauseating.

Now, by far the greatest objection to flies comes from the fact that we know conclusively that, besides being a discomfort and carrying filth, they spread a tremendous amount of disease. Besides actually dropping the germs and filth from their feet and legs, flies may transmit disease as already indicated by discharging their vile disease laden excreta either directly or indirectly upon our food. This is not only the most disgusting but by far the most dangerous feature of the typhoid fly. We might get used to their annoyances, and some of us could probably forget their filthy habits, but this death dealing feature is too important to be passed by lightly.

THE REAL PURPOSE OF FLIES.

It used to be urged that flies performed the useful office of scavengers. This argument no longer holds. We now know that while they do consume filth and germs, they almost invariably return and deposit them on our food as part of their own dejecta.

But, you ask, are flies utterly useless? No, indeed. They serve a purpose. Flies can not breed without filth, and the more filth, the more flies. One of the purposes they serve, therefore, is that of an index to the sanitary conditions of the town, of the community, of the home, in which they are found. When we learn to appreciate the fly in his true light we will prevent his breeding by abolishing his breeding places. That is the lesson of the fly. The real purpose of the fly, therefore, is to serve as a perpetual, tormenting, disgraceful reminder of our own filth, and the lesson he will eventually teach us is one of cleanliness.

HOW TO PREVENT FLIES.

To a large extent "a man's flies are they of his own household," but it might be added that in cities and towns certainly "a man's flies are they of his own neighborhood." In other words, where flies are found, they are due to filth in the immediate vicinity. It may be your own filth or it may be your neighbor's filth. At any rate it is only a question of filth, and that near by. To solve the fly problem is simply to remove, destroy, or screen all filth or possible breeding places for flies. But this is not as easy as might appear at first thought. If every householder kept his premises clean and free from filth the problem would be solved. But ordinarily a large proportion of householders fail to do this for one or more of the following reasons:

First, they don't know any better, or

Second, they don't care, or

Third, they don't think it is worth while unless their neighbors do the same thing.

It is to be regretted that there are any longer any more people belonging to the first class, but that there are is no question. What they need is a little education, either through posters, leaflets, newspapers, lectures, sermons, moving pictures, examples or friendly talks. After that they will either clean up or join the second or third class.

For the second class it can only be said that people who know that flies breed in manure, eat fecal matter, and discharge excreta reeking with filth and disease germs onto their food and elsewhere, and still remain so slothful as to neglect to take reasonable measures to prevent such action, are guilty of criminal negligence. There are not many of this class.

A great many belong to the third class. This class would be willing to abolish flies with a little encouragement and with the coöperation of their neighbors in a neighborhood or community organization for this purpose. And this is one of the best ways to abolish flies.

HOW TO MAKE A FLYLESS COMMUNITY.

To suppress flies on a large scale is by far the cheapest, easiest and most efficient way on the whole, but it means a lot of work and sacrifice on the part of some one who is willing to start such an organized effort. Where such movements have been started, a thorough campaign of education has been inaugurated in order to educate the entire community to the real importance of this matter and the method of accomplishing results. After this educational campaign, the local board of health should provide sanitary inspectors whose duty it is to make regular weekly inspections of all streets, alleys and premises and see that all filth is removed, screened or otherwise disposed of. Where the local board of health can not provide funds or sufficient funds for inspectors, business men's clubs, chambers of commerce, and other organizations have provided such funds. Or where such organizations do not respond, a canvass of certain blocks or districts in the best residential portion where the anti-fly campaign is to be waged can be made to secure volunteer contributions of from one to three or four cents a day from each householder to carry on this work. Regular weekly inspections induce at least weekly cleanings, and, therefore, fly eggs do not have sufficient time to hatch. An inspector serves to unify the work, maintain the interest, and his very presence on these weekly rounds has a very stimulating effect on the careless or forgetful householders. It makes them clean up where such action would otherwise be neglected.

The duties of an inspector are frequently made to include anti-mosquito work as well as anti-fly work. In this case the inspector carries kerosene and sprinkles it on wet places and stagnant pools of water to prevent the breeding of mosquitoes. He examines sewer manholes and catch basins, and also roof spouts, to see that no stagnant water remains to afford breeding places for mosquitoes. This is by far the best plan, as by this means flies and mosquitoes are both suppressed at practically the same cost and labor that would be necessary to wage an anti-fly campaign. It should not be taken for granted, however, that even these community efforts will entirely eliminate flies and mosquitoes. There will always be a few flies and mosquitoes whose breeding places will escape the attention of the most vigilant inspector. Therefore, screens should be used, at least around the kitchen and dining room.

One of the chief ends to be sought in such a campaign is to secure the passage of ordinances regulating open privies, livery stables, and private barns in which animals are kept. Such ordinances should provide for sanitary privies and bins, pits or other protection for manure, so that flies can not gain access to deposit their eggs. The State Board of Health will furnish suggestive livery stable ordinances and leaflets showing plans for building, and ordinances for regulating sanitary privies. Elsewhere in this BULLETIN will be found a suggested anti-fly ordinance that has been found very effective in several towns.

HOW TO MAKE A FLYLESS HOME.

Where no community effort is made to fight flies, it taxes the ingenuity and resources of the entire household to the utmost to keep itself even reasonably free from these dangerous, dirty pests. A great deal can be accomplished, however, even under these circumstances and particularly so if no horse stables, livery barns, open privies or other places having accumulations of unscreened filth, exist within a hundred yards or more of the house. One of the secrets of any successful fly fight is to begin early in the season and keep it up all year. A few flies killed in the winter and early spring will prevent thousands in midsummer.

The first step to be taken in fighting flies in individual homes is cleanliness. All filth about the premises, such as manure, garbage, fecal matter, or decaying or fermenting matter of any kind, should be screened, removed or destroyed to prevent the breeding of flies. Eternal vigilance is the price of cleanliness.

The next step of importance is to screen the house so that stray, traveling flies can not gain admission or obtain food or shelter. Make sure that your screens fit the windows closely, particularly at the top, as otherwise great numbers of flies will find their way into the house. When opening a screen door or window always chase the flies away first. It goes without saying that such doors and windows should not be kept open longer than necessary.

The next step is to destroy all flies that gain admission to the house. The best way to do this when there are comparatively few flies, is to use the ordinary five- or ten-cent wire fly swatter. It is well to have several in the house or one in each room, so that one is always handy when a fly is found. A few fly swatters in the house where there are small boys or girls to wield them will work wonders, particularly if small prizes are offered for flies swatted. The use of sticky fly paper is another excellent means of catching flies in the house. It is very efficient, particularly where there are too many flies to swat easily. Its efficiency will be greatly improved if, instead of being laid down flat it is so placed that it will have one or more raised portions. Flies much prefer to alight on some elevation rather than on a plain flat surface. Some objection is raised against sticky fly paper because of its liability to be misplaced or blown against objects or onto the floor. Carefully pinning or weighting it overcomes this objection to some extent.

Fly traps as a rule are rather unæsthetic and are rarely effective in the house, because only a few flies gain admission to a well screened house, and when for any reason a large number of flies have gained admission to a room it is always desirable to kill them off quickly. This may be easily done by closing the doors and windows and dusting pyrethrum or Persian insect powder around the room. Similar effects are obtained by burning the powder. This soon stupefies or kills the flies, although it is harmless to people. The flies should then be swept up and destroyed. Be sure to use only fresh powder and keep it well covered in a tight can when not using as it rapidly deteriorates.

The best place for a fly trap is on the lid of the garbage can. See figure 4 for method of attaching the trap. Any lid, such as a barrel head or other covering slightly larger than the top of the can, may be used. Two small cleats a half inch wide are tacked to the lower side of this lid. This permits the flies to enter the can. The trap, which is one of the cone variety, is fastened over a three or four inch hole in the lid. Around the edge of the lid is tacked a narrow strip of cloth. This cloth darkens the place at which the flies enter the garbage can, and when they have finished feeding they will come out via the large lighted hole in the lid and enter the trap. By means of such a trap most of the flies that come to the house are soon caught and but few will be observed flying around the doors, windows and porches.

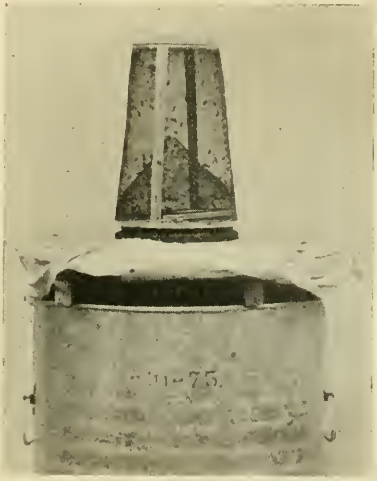


FIG. 4. Simple and very successful fly trap for a garbage can. Cloth curtain turned up to show cleats. It catches the flies outside the house. Flies enter the garbage can through the crack between the cover and the can, and also around the edge of the trap placed over a two or three inch hole in the can. After feeding they fly toward the light and come out this hole in the cover into the trap.

SPECIAL METHODS OF FIGHTING FLIES.

Under special conditions somewhat different methods yield excellent results. For instance, in bakeries, stores or certain rooms where flies do not have access to liquids or moist foods large numbers may sometimes be poisoned by using a solution of one tablespoonful of formaldehyde to a pint of sweetened water or milk. They will not drink a strong solution of formaldehyde. Formaldehyde gas itself has but little effect upon them. More flies may be induced to drink the formaldehyde and water if it is sweetened or if a piece of bread is dropped into a plate of the dilute solution and sprinkled with sugar. Other fly poisons may be used to good advantage but there is frequently danger of children or pet animals becoming poisoned with the use of these poisons. This danger is considerably less in the case of formaldehyde, although care should be exercised where there are children. Danger of poisoning may be materially lessened if small quantities of the solution are used at a time and if it is placed out of reach of children. Good results are frequently obtained by using this poison just outside a screened window or door or on the porch, particularly just before a rain storm or at other times when flies are especially troublesome.

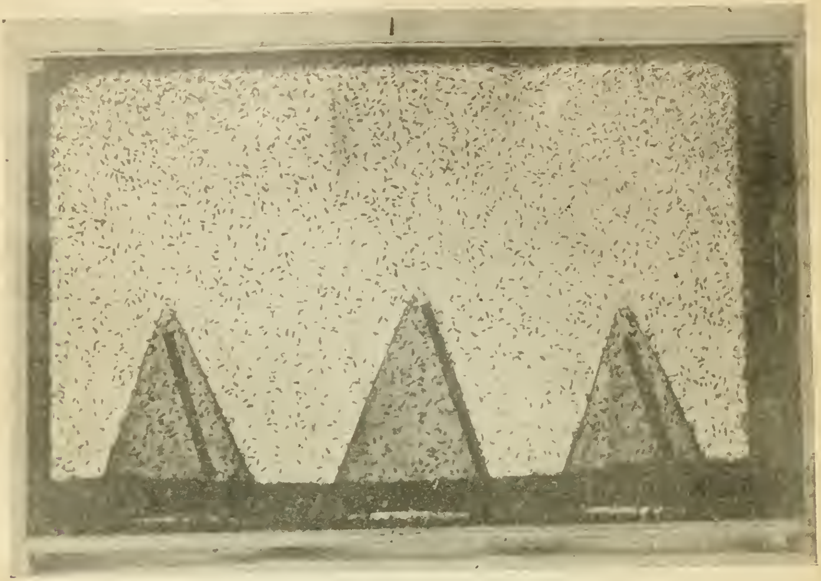


FIG. 5. One type of large and particularly successful fly trap where flies are very abundant.

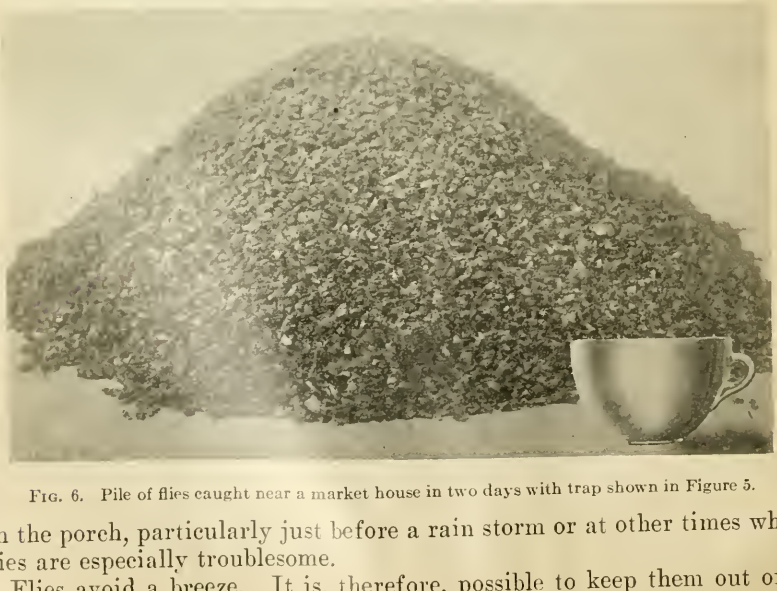


FIG. 6. Pile of flies caught near a market house in two days with trap shown in Figure 5.

Flies avoid a breeze. It is, therefore, possible to keep them out of a room, or away from a table, by the use of an electric fan. This is frequently done in hotels, restaurants, dining rooms, markets, etc.

When flies abound in great numbers it is very easy to trap them in large quantities. Such traps can be used with great success around livery stables, market houses, fruit stores, sidewalks or other places affording strong attractions for flies. Figure 5 shows a form of particularly successful trap. It was used just outside a market house and was baited with fish heads. Flies cautiously crawl in at the bottom under the inverted cone to the bait. When they leave, instead of crawling out, they fly toward the light and settle on the conical wire screen. From this position they crawl up (very rarely down) and come out of the hole in the top of the cone into the main trap. Here they may be easily killed by holding the trap over a bundle of lighted papers. Figure 6 represents the flies caught in about a half a day by the trap shown in Figure 5.

A SUGGESTED ANTI-FLY ORDINANCE

AN ORDINANCE TO PROTECT THE PUBLIC HEALTH AGAINST DISEASE AND POISON CARRIED BY FLIES.

WHEREAS, It is commonly known that flies are very dangerous carriers of filth, filth poisons, and disease germs, that they are born in filth and are a constant threat against the health, happiness, and prosperity of the people: therefore,

SECTION I. Be it ordained by the Mayor and Board of Aldermen of .... that it shall be unlawful for any person, firm or corporation to suffer or permit or have upon their premises, whether owned or leased by them, any one or more of the following unsanitary fly producing, disease causing conditions, to wit:

(1) Animal manure in any quantity which is not securely protected from flies.
(2) Privies, vaults, cesspools, pits or like places which are not securely protected from flies.
(3) Garbage in any quantity which is not securely protected from flies.
(4) Trash, litter, rags or anything whatsoever in which flies may breed or multiply.

SECTION II. It shall be the duty of the marshal, police, and health officers, upon learning in any way whatsoever of the existence of one or more of the unlawful conditions described in section I of this ordinance, to notify the offender in writing, upon order blanks provided by the city clerk, to remove or abate said unlawful conditions, stating the shortest reasonable time for such removal or abatement. In the event of the refusal or neglect on the part of the notified offender to obey such order, the marshal, police, or health officer shall inform the street commissioner upon a blank provided by the city clerk, and it shall then be the duty of said street commissioner and he shall have power and authority to remove and abate the reported unlawful conditions, and he shall keep an accurate account of the cost and expenses thereof, which shall be paid from the city treasury upon the sworn vouchers of the street commissioner, and said cost and expenses shall be a lien upon the property and shall be collected by law as taxes are collected and duly paid into the city treasury.

SECTION III. Any person, firm or corporation found guilty of having created or suffered to exist on premises either owned or leased by them any one or more of the unlawful conditions named in Section I of this ordinance shall be punished by a fine of not less than five nor more than fifty dollars.

SECTION IV. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed, and whereas an emergency exists, this ordinance shall be in effect upon and immediately after passage.

HOW TO SUPPRESS MOSQUITOES

By Warren H. Booker, C.E., Assistant Secretary.

The mosquito evil is largely preventable. To prevent mosquitoes in any section is to raise property values and eradicate malaria.

It is not the purpose of this brief article to go into the details of the disease and its development or of the entomology of the mosquito, but rather to give a brief explanation of practical methods of mosquito prevention or reduction. It is sufficient for the average person to know that all malarial fever (also called "ague," "chills," "chills and fever," "dumb ague," etc.) is transmitted from man to man by mosquitoes, and by mosquitoes alone; furthermore, that it is transmitted by the female of one particular type of mosquito (the *Anopheles*). See Figure 7. Other mosquitoes, such as shown in figure 8, may be troublesome, but they are not known to transmit malaria. Mosquitoes become infected with the malarial organism by biting and sucking blood from infected human beings. After passing through several stages in the stomach of the mosquito, this infection may be transmitted to other human beings bitten by one of these infected mosquitoes.

It is now known to be an absolute certainty that certain localities are malarious only because they furnish favorable conditions for the breeding of the malarial mosquito. Malarial fever can never occur in any locality unless some person having malaria has been bitten by the mosquitoes in that locality and in that way infected them. These infected mosquitoes in turn bite other people, leaving a tiny amount of malarial poison with each bite, and thus the disease is perpetuated.

SUPPRESSION OF MOSQUITOES.

The whole matter, therefore, narrows down to the prevention of mosquitoes in order to abolish malaria in any locality. This could never be done were it not for the fact that these particular mosquitoes rarely travel more than a few hundred feet from their breeding place. If found further away, it is usually because they have been carried by high winds. Certain kinds of mosquitoes, including the malarial mosquito, travel considerable distances through weeds, standing grain and underbrush. Care should therefore be taken to prevent such growth within at least a hundred feet of the house when the opposite side of the field contains ponds or swamps. Mosquitoes and malaria have already been abolished in many places. Notable examples are Cuba, the Panama Canal Zone, certain parts of Italy, and many localities in this country.

Yellow fever, like malaria, was found to be transmitted by mosquitoes, but this disease has now been stamped out by temporarily abolishing mosquitoes in the localities in which it occurred. After the mosquitoes were once abolished it was found that the so-called "yellow fever districts" were as healthful as any others, and even though mosquitoes did return they did not bring yellow fever, for there was no source from which they could bring the infection. If yellow fever again occurred in a "yellow fever district," it was only because some new source of infection had been imported.

Mosquitoes lay their eggs in stagnant water, in mud holes or in other damp places which are likely to be filled with water, and so hatch out the eggs. Like that of the typhoid fly, the mosquito egg develops into the larva or maggot stage and then into the pupa or resting stage, from which it hatches into a full grown mosquito. The entire process requires from ten to thirty days, depending upon the temperature. Mosquitoes are not known to breed in anything but stagnant water, and a single generation soon dies and disappears unless the females find water on which their eggs may be laid. Therefore, to suppress mosquitoes the requirement is simple:

DISPOSE OF ALL STAGNANT WATER.

Swamps, ponds, pools, marshes, and all low, wet places are ideal breeding places for mosquitoes. They breed in such places by myriads. To prevent this, either fill the pond or drain off the water, and the problem is solved. Large quantities of fish and minnows will usually consume most or all of the mosquito larvæ in a pond, provided the weeds, grass and underbrush along the edge do not exist at any place to such an extent as to prevent easy access of the fish to these places. Another means of preventing mosquitoes from breeding is to apply kerosene oil to the surface of the water at the rate of one pint for every two hundred square feet; but neither of these last two methods is as good as filling or draining the pond. One can never be certain that the fish have eaten all the larvæ; and kerosene, to be effective, must be applied at least once a week. Then it does not effectually cover the water when there is grass or underbrush along the edge, and after each rain another application of kerosene is necessary. Furthermore, if the wind blows in one direction very long, it may blow the kerosene to the opposite side of the pond.

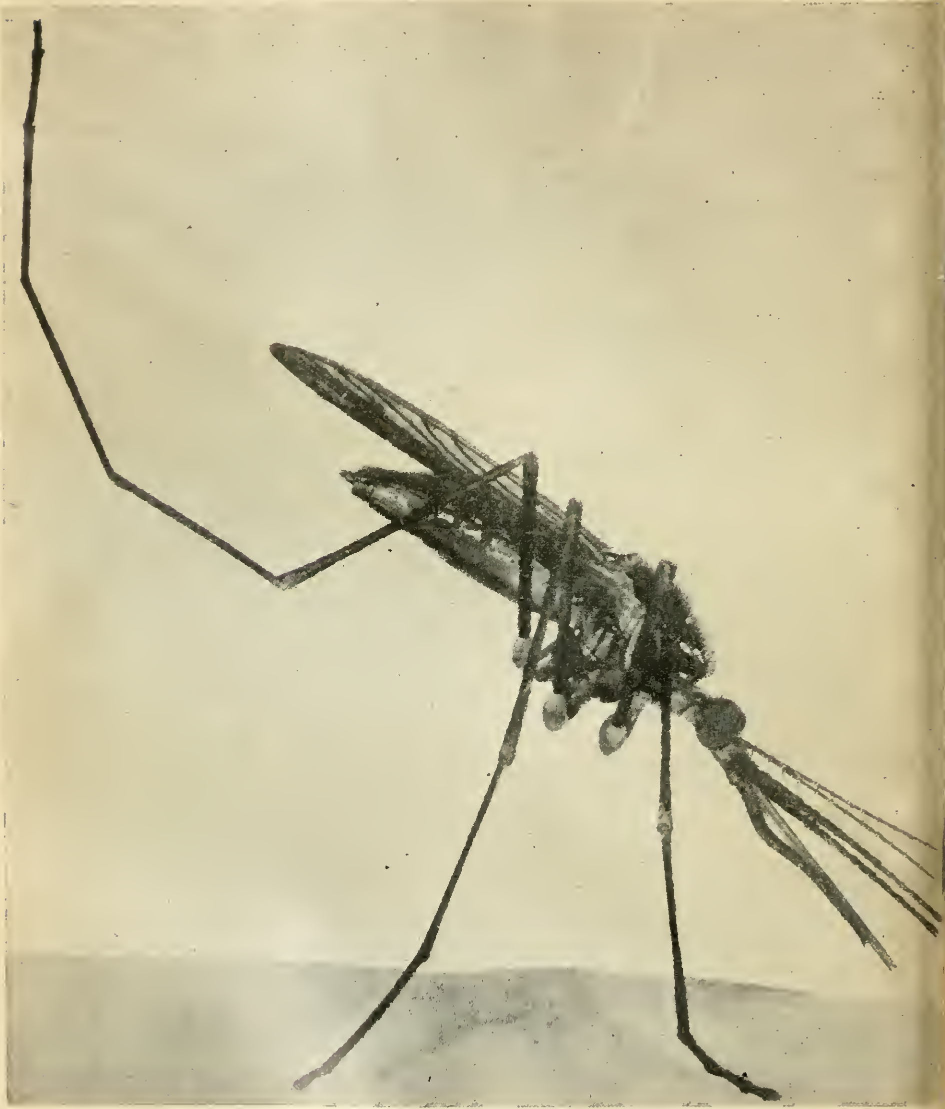
Mosquitoes do not seem to object to filthy water, as they are frequently found breeding in water that has drained from cesspools or manure piles.

No amount of stagnant water is too small to afford the mosquito a place to breed. Pools of rain water in the backyard, in the cellar or along the roadside make excellent breeding places. They should be filled or drained. Empty bottles, old tin cans, rain water barrels, buckets, tubs, broken crockery, cisterns, springs and wells also afford the mosquito ample opportunity to breed. Most of these can be easily disposed of, while wells and springs should be covered and kept covered. If desired, the covering may be of wire or cloth screen, not coarser than sixteen or eighteen meshes to the inch, but no place should exist where a mosquito can gain access to the water. Roof spouts and gutters frequently become stopped up or sag and retain water. This forms a good breeding place and one usually very convenient to bedroom windows. Such spouting should be drained and repaired.

Mosquitoes frequently breed in the house, particularly in flower vases, pitchers, empty bottles, cuspidors, tubs, and other vessels. All such stagnant water should be changed not less than once a week, and the vessel rinsed to make sure that no eggs are left along the edge. If for any reason the water can not be changed it should be covered with kerosene or screened, or the room in which it is kept should be screened.

Mosquitoes have been found breeding in all imaginable kinds of places, as, for instance, in water pitchers in the guest room, in hollow places in trees, slack tubs in blacksmith shops, in hoof prints along a muddy road, and in little used horse troughs.

It should not be forgotten that stagnant ponds, pools and swamps are by far the greatest source of mosquitoes. When such breeding places exist within a radius of perhaps a mile large quantities of mosquitoes may occasionally be carried away by the wind.



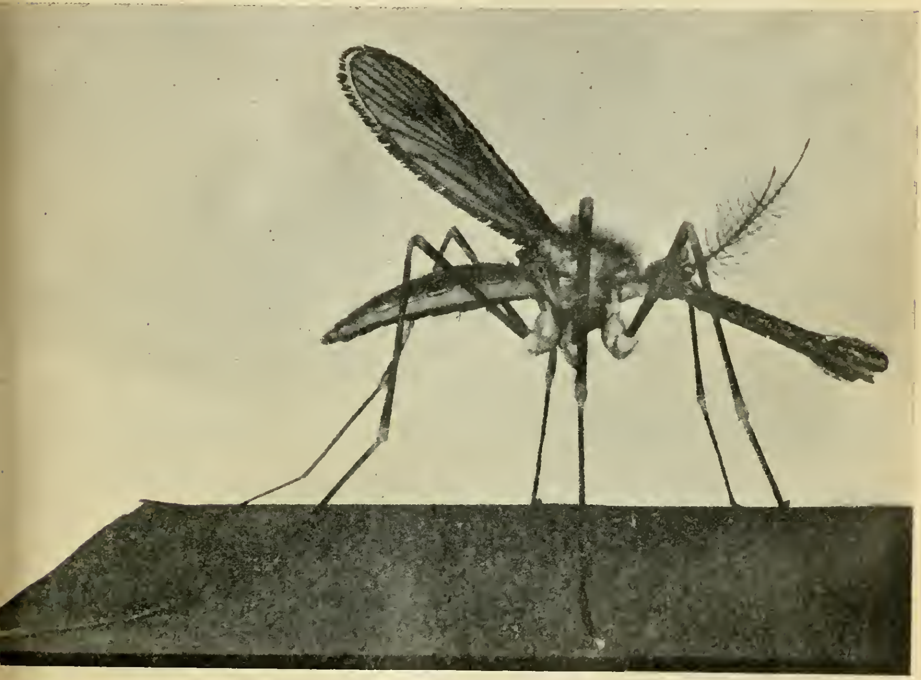
(Courtesy of American Museum of Natural History, New York City.

Fig. 7. Sitting posture of Anopheles or malaria producing mosquito. Note the different sitting positions of t ordinary mosquito and the disease producing mosquito.

OTHER MEANS OF PROTECTION.

Certain simple precautions serve very largely to protect persons living in malarial districts from this disease. Proper screening of the house will prevent the entrance of mosquitoes. Malarial mosquitoes bite mostly at night, and therefore, as a further precaution, beds should be screened. Before retiring always see that there are no mosquitoes under the netting or in the room. Such screens and mosquito netting should have not less than sixteen or, preferably, eighteen meshes to the inch. When buying screens or netting, measure an inch to see that it is not too coarse. Screens having twelve meshes to the inch are usually used for flies. These will exclude most of the mosquitoes, but not all.

A house or room may be rid of mosquitoes by killing the individual mosquitoes either with wire fly swatters or by means of a little kerosene oil in a shallow cup or tin can attached to a pole. The cup of kerosene is placed over the mosquito on the ceiling, and the fumes apparently overcome the insect, and he drops to his death in the oil.



sy of American Museum of Natural History, New York City.)

FIG. 8. Sitting posture of Culex mosquito.

Perhaps a better way of clearing a room of mosquitoes is to close the doors and windows and burn or dust pyrethrum or Persian insect powder around the room. This will overcome both flies and mosquitoes, and they can be readily swept up and burned.

To keep mosquitoes away in the woods, light a piece of rotten wood punk and make a good smoke. This is rather uncomfortable, as one must remain in the smoke a part of the time in order to have it effective. Perhaps a better means is to rub the hands and face with a mixture of two parts of oil of citronella, two parts spirits of camphor, and one part of oil of cedar. A small quantity of this mixture applied to towels hung at the head of the bed and at each window has a tendency to keep mosquitoes away, at least for some time.

In order to prevent mosquitoes in any community from becoming infected, all persons suffering from malaria should be thoroughly protected by screens.

If bitten by a mosquito, moisten a piece of ordinary toilet soap and rub it well over the place. If infected, the administration of quinine will effectually destroy the malarial organism in the blood. The usual method of administering this drug to adults is as follows: Twenty grains a day for the first four days after a chill, then fifteen grains a day for the next week, ten grains a day for the next two weeks, and five grains a day for the next week. Most people are prone to discontinue the course of treatment after a few days, or as soon as the symptoms subside, and as a consequence the seeds of malaria are left in their systems and they sooner or later have a relapse, while all the time they may be a source of infection to their friends and neighbors.

But all these ways of treating the mosquito and the malaria problem are but temporary makeshift methods. As already explained, the only real way to meet this problem is to suppress the mosquitoes by abolishing their breeding places. The great secret, therefore, in preventing the breeding of mosquitoes is the removal of all stagnant water. The method of preventing mosquitoes is analogous to the method of preventing flies. In the one case we remove the filth, and in the other the stagnant water. The method of dealing with the two problems is also somewhat similar. In either case good results can be obtained by individual effort, but much better results can be secured by concerted, well directed, community effort. The best results are obtained where the city, town or community engages in the campaign, but where the authorities are unable to see the wisdom of such action, almost equally good results follow volunteer contributions and community efforts, assisted by the local health department, as already outlined in the case of flies. In fact, the the same plan lends itself to this work so well that the sanitary inspector can investigate and have abolished both the stagnant water and the filth for just slightly more than the cost of investigating and inspecting for either.

RESIDENTIAL SEWAGE DISPOSAL PLANTS*

WARREN H. BOOKER, C.E., Assistant Secretary.

The increasing number of inquiries received at this office in regard to the design, construction and operation of small sewage disposal plants for isolated residences is indeed very gratifying. Such inquiries indicate not only a desirable increase in the number of modern sanitary conveniences in rural and suburban districts, but a very commendable desire on the part of the owners to properly dispose of the resulting sewage so that it will be not only "out of sight and out of mind," but properly purified. One of the rules for the protection of public water supplies in North Carolina requires that dwelling houses situated on such water sheds and having modern plumbing shall dispose of their liquid wastes by means of some standard disposal system to be approved by the State Board of Health, and that untreated sewage shall not be discharged into any stream, branch or tributary of a public water supply. The apparent dearth of general information on this important subject, together with the desire that others may be induced to install modern plumbing and adequate sewage disposal apparatus, is made the excuse for this paper.

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*The writer takes this opportunity of acknowledging his indebtedness for many suggestions and for the use of the cuts in this article, to Messrs. Waring, Chapman & Farquhar, Civil Engineers, 874 Broadway, New York. Further acknowledgments are due Dr. Wm. Paul Gerhard, C.E., Consulting Engineer for Hydraulic and Sanitary Works, 39 Strong Place, Brooklyn, N. Y., for suggestions made after reading the proof for this article.

Owing to the complexities of the problems of sewage disposal and the limits of this paper, we shall endeavor to confine our discussion to sewage disposal plants for isolated residences having not over ten or twelve occupants. In a later article we hope to discuss sewage disposal plants for hotels, institutions and small villages.

The chief end sought in sewage disposal for a rural or suburban residence is to so dispose of the resulting effluent that it will always be sanitarily safe and not cause a nuisance. It should be disposed of quickly, cheaply, with no offense to the senses of sight and smell and the disposal system should require but little attention from the householder. To successfully meet all of these conditions is the problem confronting the engineer. The best he can usually do is to meet some of the most essential requirements, and then approach as nearly as possible the remaining conditions.

PRINCIPLES OF RESIDENTIAL SEWAGE DISPOSAL.

In order to better appreciate the reasons for the present methods of sewage disposal it will be well to consider very briefly the nature of the problem and the theory of sewage disposal.

Sewage from residences having modern plumbing consists of a dilute solution of fecal matter, urine, soap, grease, food, paper, and filth from the laundry, kitchen sink, etc. Fresh sewage has but little odor, but if permitted to stand it rapidly decomposes and becomes offensive. Hence one of the reasons for quickly purifying or disposing of it.

The waste products or organic matter in sewage invariably decays and the final result of this decay or oxidation is some form of harmless mineral matter. This process of decay or oxidation is similar to the process that takes place when any organic substance is consumed by fire, the only difference being that one is a slow process while the other is rapid. By proper chemical treatment of the sewage this decay or disintegration may be delayed, but it can never be absolutely prevented, and such treatment simply transfers the possible evil to some future time or to some other territory. The proper thing to do is to furnish the best conditions possible for the speedy oxidation and resulting purification of the sewage. Sewage, instead of being rapidly oxidized by fire, is more slowly oxidized by means of bacterial action. The object, therefore, of sewage disposal plants is to assist this natural process of oxidation by furnishing as nearly ideal conditions for the bacteria as possible. To fail to furnish proper conditions for this bacterial oxidation is just as likely to cause trouble as to smother a fire. In the one case it may cause smoke and incomplete combustion; while in the other case it is likely to cause offensive odors and incomplete purification.

PURIFICATION OF SEWAGE.

One of the best means of oxidizing or purifying sewage is to distribute it at frequent intervals either on the surface of the ground, just a few inches below the surface, or upon a specially prepared surface or filter bed. By so doing the liquid part of the sewage filters out, soaks away and evaporates, leaving behind it on the little particles or grains of the soil a thin coating of organic matter. Myriads of tiny bacteria in the upper portion of the soil develop in a short time upon this material, which is in reality their food supply. They oxidize it and render it absolutely harmless. In the course of a few hours or a day a good crop of these bacteria consume what we shall hereafter call a dose of sewage and are ready for another dose or feed. If the sewage is applied intermittently to this soil or absorption area these bacteria will thrive and convert the dangerous organic matter into harmless mineral matter by means of the oxygen of the air. If, however, the sewage is applied continuously, these tiny bacteria literally drown, and the oxidation process stops. Then it is that the soil becomes soaked or "waterlogged," a nuisance is created, and purification is hindered. If, on the other hand, sewage is applied only at long intervals, the bacteria starve between doses or feedings and the result will again be imperfect purification. Therefore it will be seen that one of the cardinal principles of such sewage purification is the intermittent application or doses of sewage to the absorption area.

PREPARATION OF THE SEWAGE.

Raw sewage, or sewage fresh from the residence, frequently contains comparatively large pieces of fecal matter, paper, particles of food, etc. Such pieces should be in solution or broken up into very fine particles before being applied to the absorption field, as otherwise these large pieces can not be so readily attacked by the bacteria among the soil particles. To overcome this difficulty there is usually provided a watertight settling or scum tank in which the sewage is retained for from 18 to 36 hours before being discharged onto the absorption area. During this interval two distinct processes occur. First, a considerable mechanical action takes place, the heavier particles settle out and the grease and lighter particles in the sewage come to the top. Second, great colonies of bacteria thrive and multiply in the liquid, particularly in that part of the sewage which separates. Part of these bacteria thrive either in the presence or in the absence of air, but most of them are entirely different from the soil bacteria and grow and multiply only in the absence of oxygen. The tank bacteria do not purify the sewage to any considerable extent. Their work seems to be to break up the larger particles and liquefy the organic matter, or in other words, they merely prepare the sewage to be purified by the soil bacteria. Perhaps once a year it may be found necessary to remove accumulated sludge and scum from this tank, but otherwise it will need but little attention.

DANGERS OF CESSPOOLS.

Many people used to drain their sewage to a cesspool or sink hole in the ground and let it soak away of its own accord. From what has already been said it will be readily seen why these antiquated cesspools were so dangerous. They were built on entirely wrong principles. In the first place, as already indicated, soil bacteria are found only near the surface of the ground. Few exist below eighteen inches or two feet from the surface, and there is therefore little means of purifying sewage in the bottom of an eight or ten foot hole. In the second place the sewage is applied continuously and frequently partly or completely fills the cesspool. Such action drowns out all the soil bacteria that might possibly be there or be raised there. Furthermore, the immense quantity of sewage poured into these holes not only remains unpurified, but is forced by gravity directly into the ground water stratum, polluting the surrounding soil and wells, sometimes for a considerable distance.

DISPOSAL OF KITCHEN SLOPS.

Kitchen slops and wastes consist of large quantities of water containing small amounts of soap, grease, food particles, etc. They rarely contain any dangerous sewage pollution. Treating kitchen sink slops and wastes alone is a very simple matter. In rural communities the kitchen sink is frequently trapped and drained to a trough in the hog or chicken lot. When such a procedure is not desirable the waste water may be carried by a drain pipe to a point a few feet outside the house to a grease trap, from which it may be distributed through the soil by means of porous farm drain tile.

A grease trap may be readily made of cement or by means of a single length of 12 to 18 inch vitrified sewer pipe. This pipe is firmly set in the ground, bell end up and level with the top of the ground. The inlet pipe from the kitchen sink is tapped into this piece of pipe near its middle, while the outlet pipe leaves the opposite side. A short elbow attached to the outlet on the inside of the vitrified pipe dips down a few inches below the level of the liquid. By this means a large part of the heavier sediment settles to the bottom of the trap, while the grease floats above the outlet. Of course the bottom and all connections to the trap should be cemented and made water tight. A round lid should be fitted to the top of the trap, and the accumulations should be removed every few months.

From the trap about twenty-five feet of ordinary three or four inch tile laid with open joints at a depth of about a foot below the surface of the ground will care for the sink drainage from a family of from four to six people. If there are large quantities of waste, or if the soil is very dense, mucky or impervious, forty or fifty feet should be used. Inasmuch as a strainer is always used in the sink, no large particles of organic matter can enter the tile. The customary use of the sink for washing dishes and the waste water from the three meals each day serves for its intermittent flushing. While such an arrangement may not be theoretically as good as many sanitarians would desire, yet the writer knows of a number of such arrangements, one of which is still operating satisfactorily after fourteen to sixteen years' service, it being necessary to clean the grease trap only at long intervals.

RESIDENTIAL SEWAGE DISPOSAL.

While the disposal of kitchen sink wastes, where there is no plumbing or water service, is so very simple, the disposal of the sewage from a residence having modern plumbing and provided with a bath, closet, kitchen sink and laundry tubs becomes a matter of some importance.

To intelligently undertake this problem we should consider the following points: the average daily amount of sewage expected, the available space for its disposal, the character of the soil, the proximity of wells, the slope or fall of the ground, and the price of labor and of materials such as sand, tile, brick, and cement, as well as any peculiar local conditions that may prevail. In this brief discussion we shall limit ourselves to a short statement of the general plans and principles that should govern in the design of a plant for a househould of not over ten or twelve people using modern plumbing.

THE SETTLING TANK.

Statistics indicate that the average daily consumption of water per capita in towns ranges from fifty to one hundred gallons. This, however, includes water for street sprinkling, sewer flushing, fire purposes, etc. For strictly domestic purposes the daily consumption usually ranges from twenty-five to fifty gallons. When no accurate data is available it is usually safe to estimate the average daily water consumption and resulting sewage flow per person at thirty-five gallons. In order to give the tank bacteria opportunity to do their best work, and also to avoid the possibility of delivering stale or putrescent sewage to the soil bacteria, the settling tank should be designed to contain not over from 18 to 36 hours' sewage flow. For ordinary residences these tanks are frequently built circular or jug-shaped, and arched in at the top to a manhole. See Figure 9. This is the easiest mode of construction, although others make them rectangular. See Figure 10. The tank should be constructed of brick laid the 8-inch way and set in cement mortar. The wall should be plastered inside and out to a few inches above the flow line with cement mortar to make it water tight. To prevent sudden inrushes of sewage from stirring up the contents of the tank it is best to have the inlet pipe bend down by means of an elbow just inside the tank so that it discharges

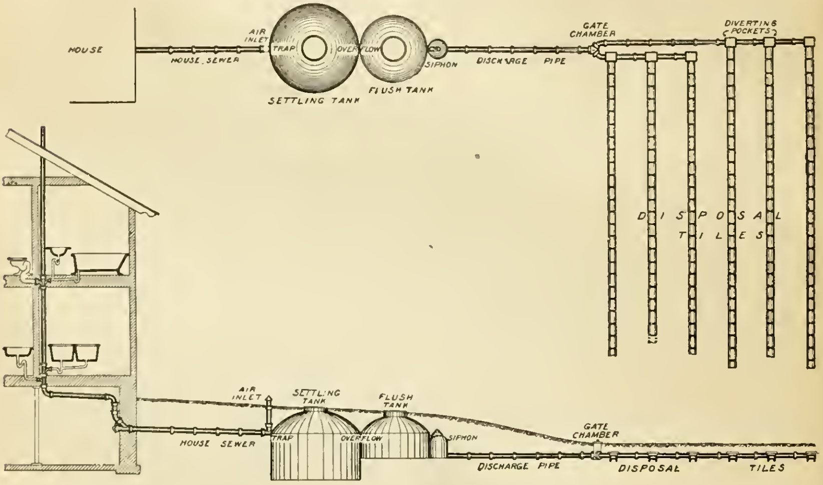

FIG. 9. Details of a typical subsurface residential sewage disposal plant in plan and section.

the sewage about a foot below the flow line. It is also desirable to place one or more baffle boards near the inlet to further prevent these disturbances. As already explained, the tank bacteria work best when the sewage is comparatively quiet. The outlet or overflow from the tank should also dip below the surface, in order to avoid carrying any of the surface scum or undissolved organic particles into the flush tank.

The pipe leading from the house to the tank should be a four inch vitrified pipe laid with carefully cemented joints and at a uniform grade of not less than one per cent, or one foot in a hundred. A steeper grade than one per cent is more desirable if it can be obtained.

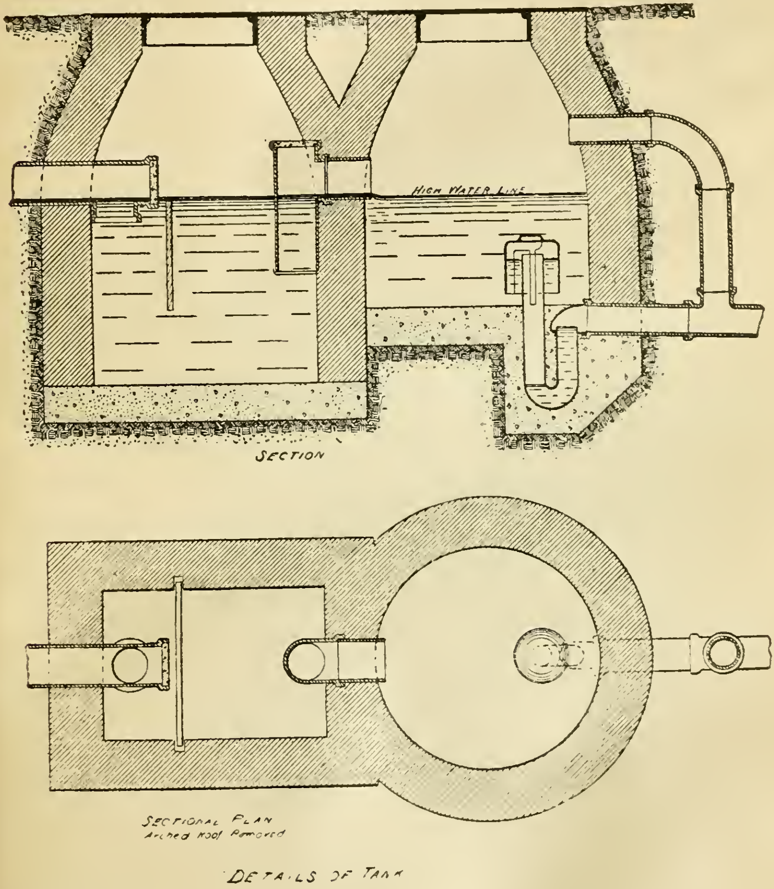

Fig. 10. Section and plan of scum or settling tank and dosing tank showing inlet, baffle board, overflow and siphon.

Contrary to usual opinion, it is not necessary to have the tank at any considerable distance from the house. They have been located within twenty-five feet, and no objection resulted. Very little odor is evolved from such a tank, particularly after the first month of its operation. In fact there should be no more objection to such a tank, if well covered, than from a well covered garbage can. Besides, there is little danger from disease from any gases or odors which may be evolved, even from large city plants. The use of flower beds or a clump of shrubbery is the usual means of hiding the opening or manhole of such a tank, should it be found necessary to locate it in an exposed place.

THE FLUSH TANK.

From the scum or settling tank the clarified liquid flows into a flush tank. This tank simply retains the more or less irregular discharges of sewage until it reaches a certain depth, when it is automatically discharged by a siphon. These siphons can be purchased from a number of manufacturers, as Waring, Chapman & Farquhar of New York, the Pacific Flush Tank Company of Chicago, or Merritt & Company of Camden, N. J. Figure 10 illustrates one form of flush tank and siphon, although there are several different makes and designs. It has been found rather difficult to keep these siphons always working properly, as they sometimes become clogged with scum or sludge. They should be examined occasionally to see that they are working satisfactorily. It has been found that if the siphon is protected by baffling or if it is placed in a separate chamber it is not so likely to become clogged and fail to work. See Figure 9.

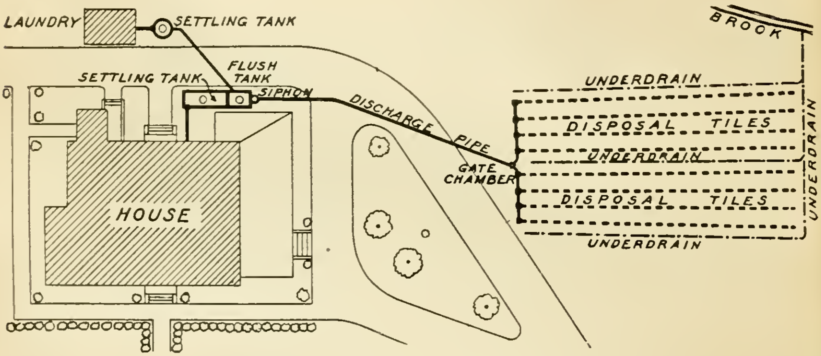

FIG. 11. Rectangular tanks close to house. Separate settling tank for laundry building. Underdrains in disposal area to drain out underlying ground water and water from purified sewage in naturally wet or dense soil.

The size of the dosing tank should be such that it will contain from twelve to twenty-four hours' sewage flow. By this means the bacteria in the absorption field are fed at frequent intervals, but not so often that they are drowned. No part of the absorption field is "waterlogged" by this sudden intermittent dosing, and the bacteria can thoroughly purify the applied sewage before another dose is added.

THE ABSORPTION FIELD.

From the dosing tank or siphon chamber the sewage flows through the discharge pipe into the disposal tiles, which are usually three, four or five inch farm drain tiles laid in trenches at a depth of not over twelve inches. They should be very carefully laid with open joints and to a grade of not over two or three inches to a hundred feet. By this means no part of the field is over dosed. The joints should be loosely covered with pieces of broken tile, preferably of a larger diameter, to prevent their filling up with earth.

The total length of tile in the absorption field will depend upon the quantity of sewage expected and upon the character of the soil. In ordinary soil four inch disposal tile may be used, while in loose, porous, sandy, or gravelly soil five or six inch tile will work satisfactorily. In dense, clayey or mucky soil it is better to use three inch tile, and it is also advisable to back fill the trenches even with the top of the tile with sand, gravel or cinders. Ordinarily it is safe to have about one foot or slightly more of four inch disposal tile for each gallon of sewage expected daily. The capacity of the dosing tank may exceed the total volume of the disposal tile by from ten to fifty per cent, as a large part of the sewage rapidly escapes into the soil while the remainder is flowing from the siphon chamber.

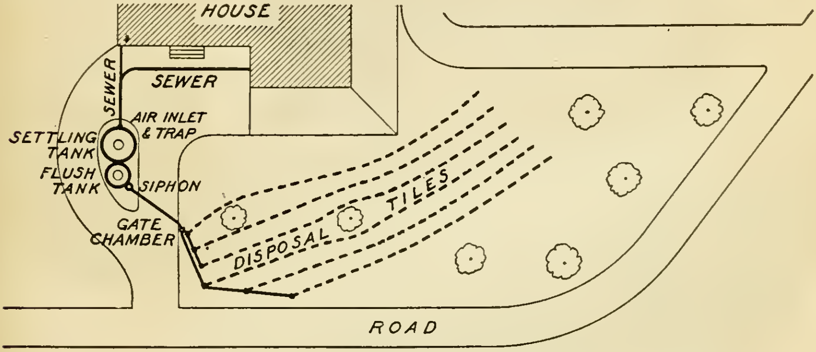

FIG. 12. Tanks near house in small oval enclosed by the drive. Disposal tile laid in lawn and among shrubbery.

The lines of tile may be as close as three feet in porous, sandy soil, but in more dense, clayey soils the rows should be not closer than five feet. Furthermore, in dense soil it may be necessary to underdrain the absorption field. This is done by laying lines of underdrain tile between the lines of disposal tile, as shown in Figure 11. The underdrains should be laid at a depth of three and one-half or four feet, and no direct connection should in any case be made between the disposal and the underdrain tile. While such a system of disposal tile frequently works for years without causing any trouble, yet they will occasionally become clogged and require cleaning. This is rarely a big job, however, as they are never laid very deep.

While it is not advisable to lay lines of disposal tile near a well furnishing the domestic water supply, there is no objection whatever to having them under the front lawn. See Figure 12. Excellent grass or vegetables may be grown where these tiles are laid.

It is not advisable in any kind of fine grain sewage filter to work it continuously. It has been found far better to have two absorption fields, so that they may work alternately for periods of a week or ten days, particularly during wet weather. Filters, or the soil in this case, apparently do better work if allowed several days occasionally to thoroughly aerate. To provide for this resting or aerating, a gate chamber or stop box is placed in the discharge pipe to divert the flow from one set of tiles to another. See Figure 9. The operation of this gate is very simple, consisting merely of placing the stop first over one branch and then over the other.

In the branch lines are arranged diverting pockets, so that as nearly as possible equal amounts of sewage are diverted into each line of disposal tile. By thus percolating through the ground the bacteria in the soil and the filtering process may be depended upon to remove the impurities so that while it may not be safe to drink, yet the effluent will never be in danger of creating a nuisance, nor should it affect a stream into which it is discharged for the purpose of watering stock.

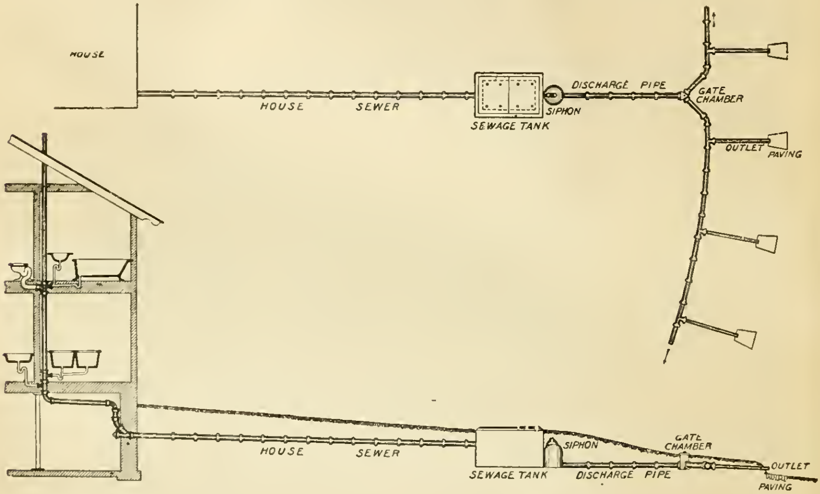

FIG. 13. Details of a typical surface irrigation plant in plan and section.

This system of sub-surface disposal, as above described, is suitable under all ordinary conditions for dwellings, small institutions, or other buildings having a daily flow of less than two thousand gallons of sewage. For greater quantities of sewage it is usually best to use surface irrigation or some form of filter bed.

SURFACE IRRIGATION.

In the case of surface irrigation it is not so essential to have all the particles of organic matter dissolved or liquefied, so in the place of the settling or septic tank there is substituted a sewage storage tank or dosing tank. See Figure 13 for a typical lay out, plan and section of a surface irrigation system. As the sewage enters this tank it is screened by means of a wire screen basket having about one-half or three-fourths inch meshes. This more or less effectually removes the coarser particles from the sewage. This basket screen is occasionally removed and its contents buried under a few inches of soil.

To further restrain the particles of organic matter a finer screen is frequently placed across the tank near its middle. This screen should have about one-fourth inch mesh.

The automatic discharge of the sewage by means of a siphon is similar to that in the case of the sub-surface system. In this case, however, instead of having the sewage flow into open jointed tiles in the ground it is spread over the surface of the ground and filters downward from the surface. Either a slab of stone, a bit of paving, or some anchored or weighted plank or platform is provided at the outlet of each distributing arm. By this means the sewage is quietly and quickly spread over large areas. This system is best adapted to porous, sandy or gravelly soils. It is of course not so well adapted for use near residences or where it is much exposed to passers-by. It may be used to advantage for residences, institutions large and small, and even for villages and towns. Used on a large scale it requires about one acre of ground for each two hundred of the population.

Strong prejudices exist against this form of disposal because of the traditional notion that sewage is, under all conditions, offensive and dangerous, whereas if the sewage tank is not designed to contain much over one day's flow no trouble will arise. There is nothing in *fresh* sewage that the upper soil and free exposure to the air will not render harmless without causing trouble in any way.

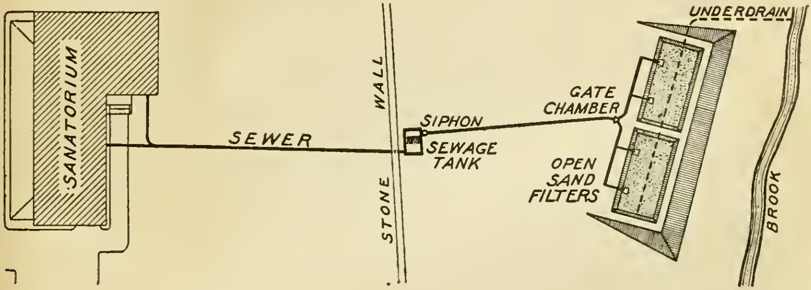

FIG. 14. Sewage disposal plant with small open sand filter beds.

SAND FILTERS.

Occasionally in the case of large institutions it may be impossible or inexpedient to purify the sewage by surface or sub-surface irrigation. It is therefore frequently necessary to use a specially prepared surface of sand, as shown in Figure 14. When sand is used almost ideal conditions are provided for bacterial action, and a high degree of purification is usually obtained on a very small area. If the sand filter is near a residence it will probably be desirable to cover it. Such a covered sand filter should be preceded by a covered septic or settling tank and flush tank similar to that described for sub-surface irrigation. If, however, the filter surface is to be left uncovered fresh sewage may be applied and a sewage tank with screens will serve as the preliminary treatment.

LARGE DISPOSAL PLANTS.

When large quantities of sewage are produced, and particularly where a high degree of purification is required, the process becomes correspondingly complex, and the services of an engineer are required. Figure 15 represents a complex disposal plant for an institution of five hundred. It consists of a screen chamber, a settling tank, a dosing tank, sprinkling filters, a sedimentation tank, a flush tank, and open filter beds. A full description and explanations of the many combinations of various operations of such plants is beyond the intended scope of this article.

While the State Board of Health can not design sewage disposal plants for individuals, firms or corporations, yet in the interest of public health and for the protection of the purity of the waterways in our State it is always anxious to be of any assistance possible in encouraging, advising or recommending in regard to sewage disposal plants, and when such sewage is produced on a watershed it is necessary to submit plans in duplicate, and to have the approval of this Board of the proposed plans before the contracts are let or construction begun.

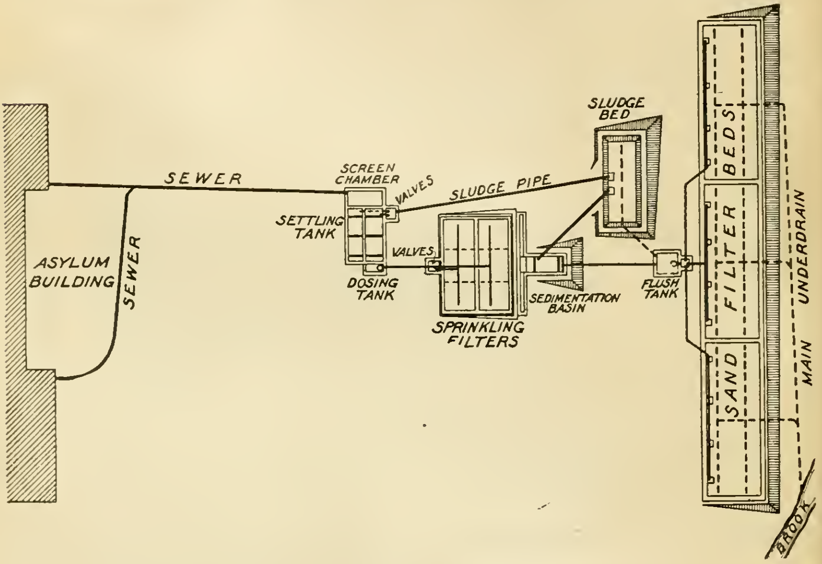

FIG. 15. Complex modern disposal plant for an institution with a population of 500.

REFERENCES ON RESIDENTIAL SEWAGE DISPOSAL.

For further information on the subject of sewage disposal for residences, the reader is referred to an excellent book entitled Sanitation, Water Supply and Sewage Disposal of Country Homes, by Dr. Wm. Paul Gerhard, C.E. (D. Van Nostrand Co., New York City, $2.00), also Practical Methods of Sewage Disposal for Residences, Hotels and Institutions, by Ogden and Cleveland (John Wiley & Sons, New York City, $1.50). Reference may also be made to Bulletin No. 6, Vol. 4, Iowa State College Engineering Experiment Station, Ames, Iowa, or to Farmers' Bulletin No. 270, U. S. Department of Agriculture, Washington, D. C., on Modern Conveniences for the Farm Home.

THIS BULLETIN WILL BE SENT FREE TO ANY CITIZEN OF THE STATE UPON REQUEST

BULLETIN

OF THE

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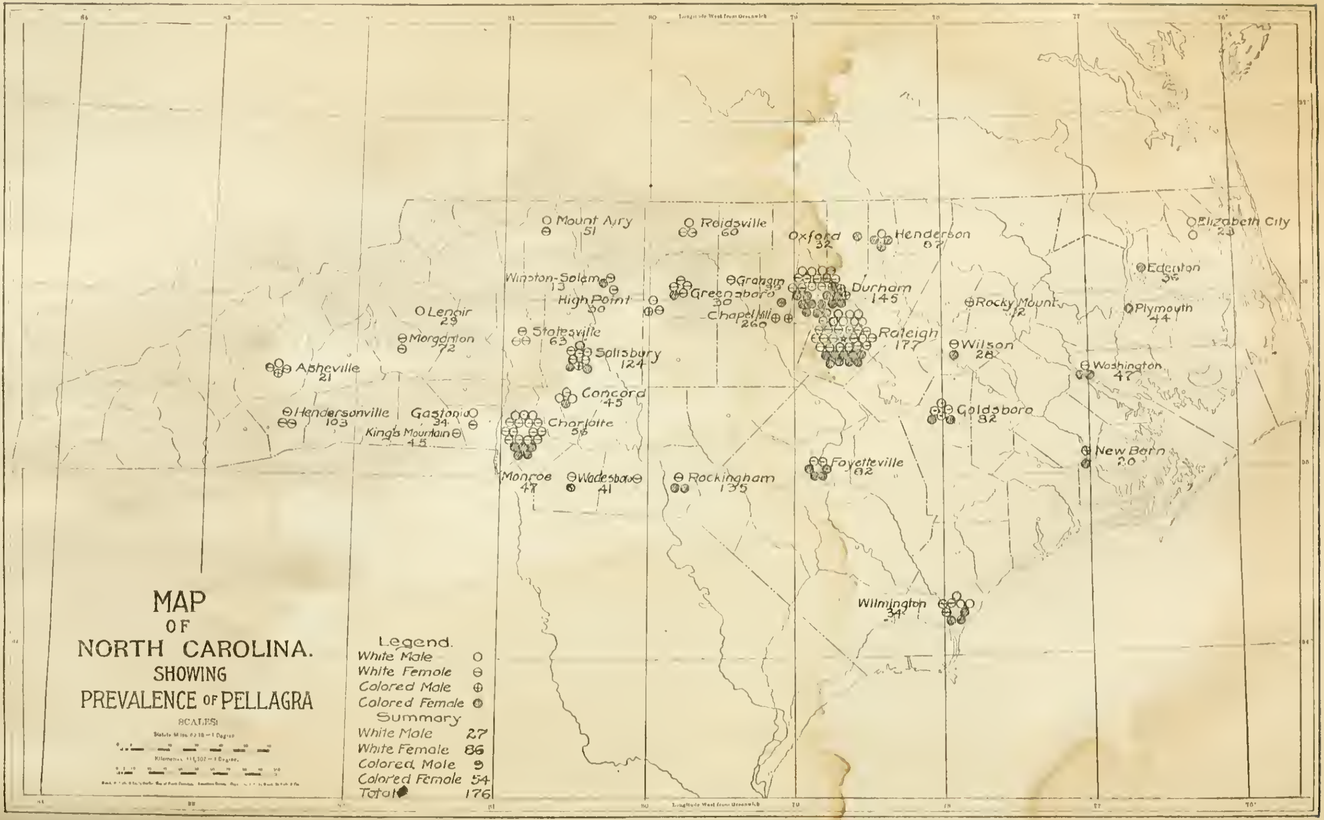
MAP
OF
NORTH CAROLINA.
SHOWING
PREVALENCE OF PELLAGRA
SCALES:
Legend.
White Male ○
White Female ⊖
Colored Male ⊕
Colored Female ●
Summary
White Male 27
White Female 86
Colored Male 9
Colored Female 54
Total 176
Mount Airy 51
Reidsville 60
Oxford 32
Henderson 87
Elizabeth City 23
Edenton 36
Plymouth 44
Winston-Salem 13
High Point 30
Graham 38
Greensboro 30
Chapel Hill 260
Durham 145
Raleigh 177
Rocky Mount 12
Wilson 28
Washington 47
Lenoir 29
Morganton 72
Statesville 63
Salisbury 124
Asheville 21
Concord 45
Goldsboro 82
Hendersonville 103
Gastonia 34
Kings Mountain 45
Charlotte 56
New Bern 20
Fayetteville 82
Monroe 47
Wadesboro 41
Rockingham 135
Wilmington 34
Longitude West from Greenwich

EDITORIAL

THE DELAYED JULY BULLETIN.

Some months ago, on account of what we regarded as unnecessary delays in the publication of The Bulletin after the subject-matter was placed in the hands of the State Printers, we announced that thereafter we would call public attention to unnecessary delays in the printing of The Bulletin if they should occur in the future.

The subject-matter of the July Bulletin was placed in the hands of the State Printers, Edwards & Broughton, on June 3d; the proof was received, corrected promptly and returned, and the State Printer had ample time to publish The Bulletin and to place it in the hands of our mailing clerk so that it could have been distributed by the first of the month. At this writing, July 8th, less than half the July Bulletins have been received by this office for distribution. The readers of The Bulletin will, therefore, understand that the unnecessary delay in the receipt of their Bulletin is not chargeable to the State Board of Health, but to the State Printers, Edwards & Broughton.

ANNUAL REPORT OF THE SECRETARY OF THE NORTH CAROLINA STATE BOARD OF HEALTH FOR 1911-1912.

Read before the Conjoint Session of the North Carolina State Board of Health and the North Carolina Medical Society, at Hendersonville, June 19, 1912.

Mr. President, Members of the State Board of Health, and Fellow-members of the North Carolina Medical Society:

I have the honor to submit, in obedience to section 8, chapter 62, Laws of 1911, this, the annual report of the Secretary of the State Board of Health. I have asked Dr. C. A. Shore, Director of the State Laboratory of Hygiene, and Dr. John A. Ferrell, Assistant Secretary for the Eradication of Hookworm Disease, to prepare and read that part of this report which relates to the work of their respective departments. This they have kindly consented to do. I shall deal, therefore, more directly with the general concerns of the Board.

THE HEALTH OF NORTH CAROLINA.

METHOD OF ARRIVING AT CONCLUSIONS.

The writer confesses to the limitation of his knowledge of methods of investigation of public health to only one reliable and universally accepted method. This method of studying health or diseases in any part of the social organism—town, county, State, or Nation—consists of a study and interpretation of the vital statistics of the body politic under investigation. Therefore, the *only* method for studying health conditions in North Carolina and for coming to conclusions in regard to the physical efficiency of the citizenship of this State is by means of the vital statistics that have been collected. *I submit for the consideration of those who form or hold opinions in regard to the health of large bodies of people, without basing such opinions upon a study of vital statistics, that they will become well known in the sanitary world as discoverers if they will point out any other means whatsoever by which health conditions in the body politic may be judged.*

The standard of public health is the average death rates of the United States. If the death rate of any county, town, or State is lower than the average, the health of that portion of the body politic is to that extent good; if the death rates of any portion of the body politic is above the average for the entire country, its health is to that extent bad.

The vital statistics in North Carolina for the last complete year, the year of 1911, in which they were collected, apply to a total population of 371,766 scattered throughout the State in municipalities of a population of 1,000 or over. This is 16.3 per cent, or slightly less than one-sixth of the total population of the State. If we should take the total deaths and the deaths for the various diseases from our registration area and multiply them by 6.13 our product would be the estimated deaths of the State for the year 1911.

CONCLUSIONS.

Chart A shows the total number of deaths and the number of deaths from certain diseases that actually occurred in this State in 1911, and that would have occurred if North Carolina had had the average death rates that obtained in the registration area of the United States, which comprises 54,000,000 of our National population. Chart B shows the comparative death rates of North Carolina and the registration area of the United States. Chart C shows North Carolina's death rate as compared with the death rates of other states. Chart D shows the percentage of deaths occurring in three important disease-age periods in North Carolina and the United States.

CHART A.

ESTIMATED TOTAL DEATHS IN NORTH CAROLINA, 1911.

Causes.	Occurring.	Would Occur with Average Death Rate.	Excessive.	Credit.
All causes	42,040	33,563	8,477	--------
Tuberculosis	5,658	3,587	2,071	--------
Pneumonia	4,322	3,305	1,017	--------
Typhoid Fever	1,551	526	1,025	--------
Diarrheas (under 2 years)	4,070	2,255	1,815	--------
Malaria	532	--------	--------	--------
Whooping-cough	736	255	481	--------
Measles	141	275	--------	134
Scarlet Fever	49	260	--------	211
Diphtheria	257	479	--------	222

CHART B.

DEATH RATES OF NORTH CAROLINA, 1911.

Causes.	In Registration Area N. C., 1911.	In Registration Area U. S., 1911.	Excess.
Total	18.4	15.0	3.1
Tuberculosis	248.2	160.3	87.9
Pneumonia	189.6	147.7	41.9
Typhoid Fever	68.0	23.5	44.5
Diarrheas (under 2 years)	178.6	100.8	77.8
Malaria	23.4	*2.2 †45.5	---
Whooping-cough	32.2	11.4	20.8
Measles	6.1	12.3	---
Scarlet Fever	2.1	11.6	---
Diphtheria	11.2	21.4	---

*For the United States. †Estimated for the South.

CHART C.

REGISTRATION STATES AND THEIR DEATH RATES.

AVERAGE 15.

1	Washington	10.0	12	Connecticut	15.6
2	Montana	10.6	13	Pennsylvania	15.6
3	Utah	10.8	14	Vermont	16.0
4	Minnesota	10.9	15	Maryland	16.0
5	Wisconsin	12.0	16	New York	16.1
6	California	13.5	17	Massachusetts	16.1
7	Indiana	13.5	18	Maine	17.1
8	Ohio	13.7	19	Rhode Island	17.1
9	Colorado	13.8	20	New Hampshire	17.3
10	Michigan	14.1	21	North Carolina*	18.4
11	New Jersey	15.5			

*North Carolina not accepted by United States Census because of incomplete registration.

CHART D.

PERCENTAGES OF TOTAL DEATHS IN UNITED STATES AND NORTH CAROLINA FOR DIFFERENT AGES.

Disease—Ages.	North Carolina.	United States.
Under 5 years—		
74% of Contagions	31.2	27.0
89% of Diarrheas		
68% of Broncho-pneumonia		
Between 5 and 50—		
93% of Tuberculosis	33.7	31.6
83% of Typhoid		
62% of Violence		
58% of Pneumonia		
Over 50—		
93% of Arterio Sclerosis	25.6	41.3
85% of Apoplexy		
75% of Heart Disease		
75% of Malignancy		
73% of Bright's		
Unknown ages	9.5	.1
Total	100	100

Let me direct your attention to certain important points of interest which Charts A, B, and C demonstrate:

TOTAL VITAL DEBITS AND CREDITS.

First, there is a total loss of 8,477 deaths in *excess* of what our State would lose if we had the average death rate of the United States. The death rate of the State shown on Chart B is 18.4. I always think of the general death rate of any portion of the body politic as the analogue of the pulse of a patient. As we use the rise and fall of the pulse wave as the general index to the vitality of the patient, so the best index to the general vitality of the body politic is the rise or fall of the death rate above or under 15 per thousand of the population, the average, the normal pulse of the United States. You observe, from Chart C, that North Carolina stands at the bottom of the list of registration states, arranging these states in the order of lowest to highest death rates. Moreover, you should remember in this connection that all the states in the list, *except* North Carolina, are accepted by the United States Government as registering at least 90 per cent of their deaths, and the fact that North Carolina is *not* accepted as a registration state means that the National Government refuses to accept the general death rate here shown as within even 90 per cent of what it should be. The death rate of North Carolina for 1910 was 18.7. We recognize that conclusions based upon statistics for only two years can only be suggestive and by no means conclusive, but even with this reservation it is interesting to note that there is a decline of .3 in our death rate from 1910 to 1911. This reduction applied to the entire population of the State means a saving of 671 lives a year, which capitalized at the average economic value of life, $1,700, amounts to a total saving in vital assets of $1,140,700. With that amount of life saved there was prevented an amount of sickness equal to the total incapacitation of 2,000 people for an entire year. So much for total losses and general death rates.

THE RELATIVE RANK OF OUR FOES.

Second, I wish to call your attention to certain special death rates. This is all-important to the sanitarian in indicating to him the distribution of his forces in the war against disease; for, so long as public agencies for the suppression of disease are insufficiently equipped to prevent *all* sickness and death, it would certainly seem the part of wisdom to turn our guns on those diseases that are affecting the largest number of our citizens, that is, diseases directly or indirectly responsible for the heaviest death rates. It therefore becomes a matter of importance that the sanitarian study special death rates carefully in order to appreciate those causes of death most deserving of his attention.

Turning now our attention to those special death rates, I ask you to note first, on Chart A, that North Carolina loses over 2,000 lives from tuberculosis in excess of what the State would lose with the average death rate from tuberculosis. Note again, on the same chart, that the next heaviest loss is from the diarrheal diseases of children under two years of age. Here again you observe that the entire excess loss from this cause to the State amounts to nearly 2,000 lives a year. As a preventable cause of death typhoid fever is next deserving of our attention. Our State had last year a triple death rate from this disease, as shown on Chart B, and lost over 1,000 lives in excess of what we would have lost had we had an average death rate from typhoid fever. The next disease from a standpoint of death and sickness that deserves our attention is malaria. The fatality from malaria is about 1 per cent, which would mean that, with the loss of 532 lives from this cause in 1911, there must have been about 53,000 cases of chills and fever.

With these excessive death rates, it is encouraging to know that the death rate of North Carolina from contagious diseases is less than the average that obtains throughout the United States. This fact is explained by the large proportion of rural to urban population in our State, for the more concentrated a population the easier the means for the spread of contagion.

WHOOPING-COUGH, THE MOST DANGEROUS CONTAGION.

There is one intensely interesting and important lesson which the death rates from the four principal contagions should force upon this assemblage. As you know, there is great opposition to the quarantine of whooping-cough in North Carolina. Some intelligent people are opposed to the quarantine of this contagion, which the census of the United States shows is more important than measles or scarlet fever as a cause of death, and which statistics show causes the death of twenty-five children under one year of age out of one hundred such children that contract the disease. Whooping-cough in North Carolina, in 1911—probably because the public did look upon it as one of the necessary evils of childhood, and opposed the quarantine of the disease—killed over *fifteen* times as many children as scarlet fever, over *five* times as many children as measles, and caused almost twice as many deaths as diphtheria, measles, and scarlet fever combined. The suggestion from these figures is unavoidable that the people of this State who dread scarlet fever with its susceptibility* of 50 per cent and its fatality of 12½ per cent, demand its quarantine, and who, not dreading whooping-cough with its susceptibility* of 91 per cent and its fatality of 10 per cent, oppose its quarantine. The chart shows that whooping-cough had nearly a triple death rate in North Carolina, where all the other contagions fell under the average.

THE EFFECT OF HOOKWORM DISEASE EXAGGERATED.

In the present state of public opinion no consideration of the health of North Carolina can be considered in any way complete without some reference to the effect of hookworm disease on the life of this State.

In prefacing my remarks concerning special disease death rates, I pointed out that, from a public standpoint, the importance of any disease was commensurate to its direct or indirect effect on death rates; for there are no diseases, no matter how mild, that do not operate as contributing factors through one channel or another to the general and some special disease death rates. Therefore, the importance of hookworm disease as compared with tuberculosis, diarrheal diseases of infants, typhoid fever, and malaria, from a public standpoint, must be judged, first, from the special death rate from hookworm disease, and, second, by the general and special death rates from other diseases to which it can be shown, or it is reasonable to suppose, that hookworm *indirectly* contributed.

As to hookworm as a direct cause of death: Of 6,858 death certificates filed with the State Registrar for deaths occurring during 1911, in the total registration population of the State of 371,766, only two certificates assigned hookworm disease as the cause of death. Notwithstanding the fact that this disease is, to a considerable extent, a rural disease, and that these certificates are from urban populations, still one would expect, from the importance at present given this disease, and in view of the constant influx from the country to the town, a much larger number of deaths from this cause. However, it is generally conceded that a large majority of the cases of hookworm disease in this State, and in the South, are of a milder type, and would, therefore, not act as a direct cause of death, but would exert their morbid influence as contributing factors to general and special disease death rates. So, turning from hookworm disease as a direct cause of death, let us now examine the disease as an indirect cause of death or a contributory cause of death.

The standard form of death certificate contains, after the blank in which is written, by the attending physician, the cause of death, a blank in which is to be written the contributory cause of death. It will, therefore, be interesting to examine the 6,858 death certificates filled out by the North Carolina medical profession to note on how many of these certificates they assign hookworm disease as a contributory cause of death. On only *one* of these certificates does hookworm disease occur as a contributory factor to the death of the decedent. It is interesting to know, in connection with this, that 55 of the 6,858 death certificates carry malaria as the contributory cause of death.

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*That is, the number who contract a disease on exposure to the contagion.

Such suggestive data as the above warrant a further examination of the influence of this disease on death rates. To what death rates would hookworm be most likely to contribute? In answering this question let us remember the age period in which this disease is operative. In the first place, the disease in this State, and in the South, is contracted in the barefooted period of life, that is, from three to eighteen or twenty years of age. Dr. Stiles' youngest case was three years of age. Nicholson and Rankin reported a case two and one-half years of age. Of 118 cases studied with reference to age by these last observers, only 6 per cent occurred under the fifth year. These facts are in perfect harmony with the etiology of the disease—bare feet, active life on infected premises, and ground-itch. It would, therefore, be unreasonable to suppose that hookworm disease had any part in the death rates of North Carolina under five years of age; nor would we expect to find the disease playing a rôle of any importance as a contributory factor of death beyond the fiftieth year, because for a number of years preceding that age people have worn shoes and the infecting parasite, long since having reached its natural longevity, has loosened its bloody grip upon the body. Moreover, the diseases that dominate that period as causes of death would require a considerable stretch of the imagination to connect their etiology with an infection of hookworms twenty, thirty, or forty years previously. This leaves us the age period from five to fifty in which to study hookworm as a contributor to death rates. We would naturally expect the disease to affect death rates during this period, for it is during the first twenty years of this period that at least 90 per cent of the cases in this State exist, and it is during this age, too, that that class of diseases, the infections, tuberculosis, typhoid fever, blood poison, etc., the diseases whose frequency and effect would be influenced by factors producing a lower vitality, such as hookworm disease, are active. Observe Chart D. Note that the high death rate of the State is under the fifth year, that is, in the *non-hookworm* period; that the death rate of the State between the fifth and fiftieth year is but 2.1 per cent in excess of the average death rate for that age in the registration area of the United States *where there is no hookworm disease*. Charging hookworm with the *entire* excess death rate of this forty-five year period, the disease as a cause of death falls far short of typhoid fever, and is not in the same class with tuberculosis and diarrheal diseases of children.

The rank of hookworm disease among the other important diseases commanding the attention of health departments will be fixed ultimately by vital statistic reports. Fortunately, there are now three states in the South, Virginia, Kentucky, and Mississippi, that have enforcible vital statistics laws, and it will probably devolve upon these states to solve one of the most important phases of the hookworm problem, namely, its effect on public life. Until this time the public mind has rated hookworm disease altogether on the *frequency* of infection and utterly ignored the equally important factor, the *severity* of the infection. In order to appreciate the importance of this disease from a public standpoint, it is not only necessary to know that 800,000 North Carolinians carry the parasites in their intestines, but it is equally necessary to have some reasonable idea, based upon an ample investigation, as to the number of worms the average host contains. We must recognize the principle that parasitism is one thing; pathogenesis* another thing. Has the average North Carolinian, has the average Southerner, ten, thirty, fifty, one hundred, or two hundred hookworms? For thirty-five college students from which the worms were carefully counted by the Allen J. Smith method, there was an average of but twenty worms. A letter from Dr. Bailey K. Ashford of Porto Rico, in answer to an inquiry from me, states that he regards from three hundred to five hundred worms necessary to produce recognizable symptoms; that it would require from seven hundred to fifteen hundred to produce medium or rather severe infection, and from two thousand to three thousand to produce death.

Reasoning from the facts in the case, the vital statistics from this State, a very large part of the 30 per cent infection of our people is so light as to be, *comparatively* speaking, a case of parasitism more than a condition of pathogenesis,* and hookworm disease ranks, in North Carolina, among the other important causes of death as fourth or fifth in the list, somewhere near malaria, a disease which resembles it in geographic distribution, in frequency of infection, and in its anemia-producing power. It is necessary for public health administrations to recognize preventable diseases in their relative importance, for partly upon that should depend the distribution of their forces in the fight against the different divisions of the foe.

PELLAGRA WORTHY SERIOUS CONSIDERATION.

One more disease deserving of some attention in any consideration of the health of North Carolina is pellagra. In 1910 there were 115 deaths reported from the registration area of the State, a population of 371,766; in 1911, 176 deaths were reported from this same population, which means an increase of 53 per cent. The death rate in the State at the present time is 47 per 100,000, or just double the average death rate of typhoid fever in the registration area of the United States.

There are several interesting points brought out in tabulating the deaths from pellagra. See map on page 2, showing tabulation of important data and distribution of this disease in North Carolina. The first is, that the disease shows no discrimination between the races, involving the whites and the blacks in about the same proportion in respect to their relative populations. The second interesting point is, that the disease *does* discriminate in its relation to sex, season, and section of the State. For example, of the 176 deaths 140 were women and only 36 men. The disease reaches its lowest ebb as the cause of death in December, remains fairly constant until May, when it takes a sudden rise to its maximum death rate in June, remains constant until October, when it begins to decline, reaching its minimum death rate in December; and finally, 80 per cent of the disease occurs in the Piedmont Section of the State. Looking at the map with the disease located upon it, one gets a vague suggestion as to the disease bearing some relation to the railroad facilities. It is important that I say to you that the deaths shown on the map, with the exception of four deaths distributed among three cities, occurred among the residents of the town to which the map credits them.

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*Disease-producing power.

Pellagra at present is a National problem, and recognizing that fact, I have written our representatives in the Senate and Congress of the United States the following letter:

NORTH CAROLINA STATE BOARD OF HEALTH.

OFFICE OF THE SECRETARY.

RALEIGH, N. C., June 14, 1912.

MY DEAR SIR:—I am writing you in my official capacity to call your attention to a phase of the public health problem which very deeply concerns our State, and a solution for which belongs more to the National Government than to the State Government. I refer to the disease, pellagra.

As you know, this disease is comparatively new in our country. In 1910 there were 115 deaths in the registration area of North Carolina, that is, a section of the State in which at least 90 per cent of deaths, with their causes, are recorded, and which area comprises 371,766, or 16.3 per cent of the State's population. The estimated number of deaths in the entire State would amount to 705 in 1910, and the deaths for the entire State amounted in 1911 to 1,079. You can very readily see that the disease is gaining ground in North Carolina. This disease in European countries has been known to increase very rapidly, and we have no assurance that the present rate of increase in North Carolina will not continue, and that in a short time we may have another disease on our hands approximating in magnitude that of tuberculosis and diarrheal diseases of children. Already the death rate from pellagra in North Carolina is 47 per 100,000 of the population, which is exactly double the death rate of typhoid fever in the registration area of the United States, which comprises a population of 54,000,000.

Now, if this disease existed in only *one* Southern State it would be a state problem. But inasmuch as what is happening in North Carolina from pellagra is taking place in every other Southern State, this problem is not an intrastate, but an interstate one, and deserves the attention of our National Government.

It would manifestly be economically unwise and unfair to expect one or two states in the South to appropriate a sum of money for the study of the causative factors in this disease, with the view of discovering its prevention, when such work would equally benefit the entire South. After the cause of the disease has been discovered and the means for preventing it worked out, then each state can protect its own population by seeing that the preventive measures are applied. The disease, therefore, *after* its means of prevention are discovered, will pass from a national to a state problem, but under the present circumstances the disease is a national problem.

I feel that the responsibility rests upon me, as the State Health Officer of North Carolina, to say this to you, and that much of my responsibility for any future effect of this disease upon our people is transferred to your shoulders when I call your attention to the situation and respectfully recommend that, with the other representatives from North Carolina in the Congress and Senate of the United States, to whom I have written this same letter, you use your influence for securing an appropriation to be used by a commission of experts for the study of this disease in the South, with the view of discovering its cause and the appropriate means of prevention. This commission could be selected by a committee appointed by the Senate or Congress, or it could serve under the United States Public Health and Marine Hospital Service, or in any way that your good judgment suggests.

In conclusion, I wish to assure you that while I have a personal interest in this matter as well as an official responsibility, and while I believe that, having had your official attention called to this condition, future responsibility is more yours than mine, I shall rest contented with whatever disposition you make of the matter. However, I wish to assure you that, if I can be of any assistance whatever to you in inaugurating any action looking to the suppression of this disease, my services are at your disposal.

With the highest esteem, I am,

Very respectfully yours,
(Signed) W. S. Rankin,
Secretary.

WORK OF THE STATE BOARD OF HEALTH FOR THE PAST YEAR.

EDUCATIONAL.

Public health work is still, in this State, largely educational. The executive work of the Board compared with the educational work is small. The dissemination of the knowledge of prevention of disease through all available channels places in the hands of individuals means by which, to a certain extent, they can protect themselves, even though they live in an unsanitary community, and by its general effect upon the public mind creates a sentiment which will first demand, and later enforce, sanitary legislation.

The agencies through which the educational work of the Board has been carried on are correspondence, bulletins and pamphlets on the more important preventable diseases, and last, but by no means least, a large amount of newspaper work.

Correspondence.—The correspondence of the State Board of Health now amounts annually to 10,000 ordinary letters, and an additional 10,000 circular-letters, not to mention about 300 regular monthly notices mailed out to the various officials whose work is associated with that of the State Board of Health. This does not include the correspondence in either Dr. Shore's or Dr. Ferrell's division of the health work.

The Bulletin, a thirty-two-page pamphlet, has grown from an eight-page pamphlet with a circulation of 3,000 addresses in 1909 to a mailing list of 11,500 in 1910, 20,000 in 1911, and 40,000 in 1912. This publication reaches 90 per cent of the professional people, doctors, lawyers, and preachers of our State, and 80 per cent of the public school teachers, State, county, and city officials, besides a very large number of interested nonprofessional and nonofficial readers. The 40,000 families reached represent about 200,000 people, which means that THE BULLETIN reaches about one white family out of every seven or eight. Most of those present are familiar with the character of these publications, and to those who are not I wish to say that I have a supply of them here on the desk, illustrating the material that the State Board of Health has for distribution for the sanitary enlightenment of all the people. In addition to the Bulletins, the State Board of Health keeps in stock for distribution to all who request them, pamphlets on tuberculosis, typhoid fever, hygiene of infants, malaria, hookworm disease, quarantine and disinfection, sanitary privies, medical inspection of schools, protection of public water supplies, and State Health Laws. We shall soon have stock pamphlets on vital statistics, flies, cancer, and residential sewage-disposal plants.

Newspaper Work.—During the last eight months the Assistant Secretary, Mr. Warren H. Booker, has pushed a vigorous newspaper campaign along the lines of public health. A newspaper article of from two to five hundred words, occupying from one-third to a column of ordinary newspaper space, plus a number of short, pithy paragraphs of from ten to one hundred words, making altogether an article of two columns, is sent out weekly to every newspaper in the State. This arrangement permits the newspaper to give the main article a conspicuous space and to use the shorter articles as "fillers." The editors understand that they are privileged to use the material as either editorial or contributed matter, either with or without credit to the State Board of Health. This arrangement of the newspaper material has been worked out with the advice and coöperation of the editors of the State. Information obtained through a recent questionnaire mailed out to the editors of the papers of North Carolina shows the following facts: That the papers publishing this material have an aggregate circulation of 475,000, and that altogether an amount of this health literature has been published in the last eight months that, if put in regular newspaper column form, would form a ribbon 161 miles in length, and if the amount of this material were computed in terms of THE BULLETIN, our thirty-two-page monthly publication, it would amount to an extra edition of 40,000 copies of THE BULLETIN. That is to say, counting the newspaper work as BULLETIN material, THE BULLETIN would reach 80,000 addresses. However, the newspaper material is short and fragmentary. THE BULLETIN material is more comprehensive than the newspaper material, and therefore would attract a different class of readers. In this connection, it is well to remember that THE BULLETIN costs the State considerably, whereas the newspaper material costs the State nothing save the patriotic devotion of the press of the State to the public welfare.

As I have had very little to do with this newspaper work, I feel that I can speak in commendation of it without putting any extra strain on the *vaso-motor* attachment of my facial artery.* We have on file complimentary letters about the quality of this material from some of the best editors of the State, and I seriously doubt if there is any state in the United States that is doing as much sanitary educational work through the press as North Carolina. The interest of the editors of the State in the solution of the problem of public health, and their cordial coöperation in the dissemination of the knowledge of the means of preventing disease, is a matter for which we are not only deeply grateful, but to which the citizens of this State are more obligated than they realize.

EXECUTIVE WORK.

THE NO-QUARANTINE MANAGEMENT OF SMALLPOX.

The only phase of the executive work of the State Board of Health to which I wish to call your attention is the new law in regard to the management of smallpox without quarantine. I think we may safely say that one year's test of the value of this method of handling the disease has forever killed the quarantine of smallpox in North Carolina. The public has had a sufficient demonstration to prove to them the wisdom of not assuming responsibilities that are in the strictest sense individual. There are now five states in the Union that oppose the quarantine of smallpox: North Carolina, Florida, Montana, South Carolina, and Minnesota. The last two, however, do have the authority to enforce compulsory vaccination in exposed communities. A questionnaire sent out recently to the county superintendents of health was promptly filled out and returned by forty-two of these officials. These questionnaires tabulated show the following facts: That thirty-seven of the forty-two counties do not quarantine the disease; that the management of smallpox with quarantine has averaged, during the five years preceding the enforcement of the no-quarantine law, a cost to the State of $66,000 a year, and there were annually something like 7,500 cases in the State. The figures for last year indicate that the disease has cost the State $2,600, and that there were 4,200 cases in the State. The data, therefore, indicate that there was saved to the counties of the State $63,400 last year by the no-quarantine regulation, and that the number of cases was decreased to the extent of 3,300.

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*Mechanism concerned in blushing.

The county superintendents of health answered the question as to the influence of no-quarantine regulation on the vaccination of the population as follows: Two said it was bad; ten said it had no effect; twenty-five said it had a good effect, and many of the health officers were enthusiastic in its praise. The day when intelligent people of North Carolina waste their time and money to protect those who refuse to protect themselves, and protest against the good intentions of their protectors, has gone. Vaccination, the *sole* prevention of smallpox, is so recognized in the sanitary administration of North Carolina.

W. S. Rankin, *Secretary,*
North Carolina State Board of Health.

ANNUAL REPORT TO THE NORTH CAROLINA STATE BOARD OF HEALTH ON HOOKWORM CAMPAIGN.

By John A. Ferrell, M.D., Assistant Secretary to North Carolina State Board of Health for Eradication of Hookworm Disease.

Mr. President and Gentlemen:—It affords me pleasure to report splendid progress for the past year in the State Campaign against Hookworm Disease. The local coöperation received has been generous, definite, and of a substantial character. County appropriations have been made in forty-one counties, aggregating $9,700, for paying the local expenses (such as drugs, publicity work, traveling expenses of microscopists, etc.) of State and County Dispensaries for the free examination and treatment for the disease. The average duration of the county campaigns has been six weeks. This means that for six weeks of definite health work forty-one counties have appropriated more money than has been appropriated annually for salaries of county health officers in sixty-five or seventy-five counties.

The dispensary work has been completed in twenty-eight counties, is now in progress in five counties, and eight other counties are on the waiting list. Sixty thousand nine hundred and five examinations have been made during the year and 42,231 people have been treated in the dispensaries (up to June 1, 1912), and thus helped to healthier, happier, and more useful lives. Up to date, 1,276 doctors, a number much larger than the membership of the State Medical Society, have sent in signed reports of their experience with the disease. They have treated and reported 30,909 cases, which, with those treated in our dispensaries, aggregate 73,140 people treated up to date.

Until recently the dispensary work has been confined to the eastern section of the State. Six of the western counties have now made appropriations, and already the dispensary work is progressing nicely in Wilkes and Catawba counties. We shall work in the mountain section chiefly until cold weather and bad roads render work in the east more practicable. In the early days of the dispensaries some of the examinations were based on clinical diagnosis, but during 1912 all treated cases were first found microscopically infected.

Other lines of educational work previously pursued are kept up as far as practicable. Especial attention is given to making infection and sanitary surveys of the counties worked, so that progress in sanitation may be measured. You will recall from my last report that the infection survey is based on a microscopic examination of a minimum of 200 rural children, aged 6 and 18, inclusive, taken at random for each county. These surveys are now complete in thirty-five counties, and show from 15 to 75 percentage of infection. The sanitary survey, based on the inspection of a minimum of 100 rural privies, has been completed in fifty-four counties. The sanitary indices range from 1.5 up to 8.5 per cent. The tabulations of these surveys by counties and also the tabulations of the dispensary work by counties is appended to this report.

Our work with counties has been harmonious. No controversies have arisen in a single county, and our methods, work, and results have met with heartiest sympathy and commendation.

The personnel of the physicians engaged has not changed except in the case of Dr. B. W. Page, who was selected as a whole-time health officer of Robeson, in which county he had previously conducted the dispensary work. He was replaced by Dr. G. F. Leonard, chief assistant for five years to Dr. Stiles in the U. S. P. H. and M. H. Service. Dr. T. E. Hughes entered the service last September as a State employed director. He, three microscopists, office furnishings, rent, etc., have been paid out of the State fund. Contrary to our expectations, we have thus far been unable to employ the second director, as was anticipated, out of the State funds. We trust, however, we may have this man and additional workers in the near future.

To note that the annual report of the Rockefeller Commission gives North Carolina a position heading every list of tabulated results accomplished in ten Southern States gives us occasion for pardonable pride. In the following achievements our State is well in the lead: In the number and percentage of doctors treating the disease; the number of people examined and treated by practicing physicians, and in the free dispensaries; the number of county infection and sanitary surveys completed; the number of counties making appropriation for free dispensaries; the amount of money raised locally for coöperating with the Commission.

This does not mean that North Carolina has heavier infection than other states. On the contrary, it is lighter here than in several states. It simply means that the best people in all the State have recognized the existence of the eradicable disease and are lending themselves and their resources generously toward making North Carolina the first state to free itself from this important disease.

County.	Sanitary Survey.		Infection Survey.		
	Number Inspected.	Sanitary Index.	Number Examined.	Number Infected.	Percentage of Infection.
Beaufort	563	3.41	423	280	66
Bertie	355	6.21	1,539	743	48
Bladen	135	3.92	257	131	50
Brunswick	336	2.53			
Buncombe	249	2.02			
Burke	365	2.50	426	252	59
Caldwell	670	3.62	337	214	63
Carteret	150	5.86	1,333	860	64
Catawba	198	2.87			
Chatham	103	5.63			
Chowan	256	4.76	544	220	40
Cleveland	359	2.76			
Columbus	785	5.45	263	232	88
Craven	363	4.30	1,509	828	54
Cumberland	294	6.30	1,537	775	50
Davidson	143	8.46			
Davie	111	6.12	225	39	17
Duplin	338	5.93	237	175	73
Edgecombe	441	7.56	1,149	421	38
Forsyth	157	7.70			
Gaston	117	3.17			
Gates	411	5.25	889	318	35
Greene	240	6.20	544	270	49
Guilford	208	8.56			
Halifax	721	6.73			
Harnett	119	4.40	763	362	47
Hertford	183	9.01	389	122	31
Iredell	265	5.16			
Johnston	411	6.74	394	138	35
Jones	206	3.88			
Lenoir	312	6.00			
Lincoln	269	5.35			
Martin	504	5.09	1,176	542	47
McDowell	456	3.42	287	206	71
Mitchell	597	2.59	210	110	52
Montgomery	329	5.80	248	52	20
Nash	187	6.04	1,448	731	50
New Hanover	358	5.68	268	147	51
Northampton	357	6.50			
Onslow	473	4.84			
Pender	219	4.61	612	430	69
Pitt	260	6.00	412	278	67
Randolph	283	6.78	254	45	17
Robeson	595	5.70	1,411	722	51
Rowan	350	7.65	246	50	20
Rutherford	379	1.55			
Sampson	179	6.03	859	688	80
Stanly	107	5.42			
Wake	897	5.18	1,115	534	47
Warren	444	7.63	399	163	40
Wayne	211	7.14	1,943	1,053	54
Wilkes	389	3.20			
Wilson	187	7.75	717	478	67
Yancey	133	2.16	557	175	31

DISPENSARY WORK UP TO JUNE 1, 1912.

County.	Amount Appropriated.	Amount Spent.	Duration, Weeks.	Micro. Examinations.	People Treated.
Beaufort	$ 300	$ 248.57	8	4,335	1,196
Bertie	250	283.46	8	4,069	1,549
Bladen	200	138.20	5	257	1,483
Brunswick	300	240.48	5	317	1,670
Burke	250				†
Caldwell	200				†
Carteret	150	150.00	4	2,669	1,194
Catawba	250				*
Chowan	200	148.95	5	1,575	487
Columbus	300	328.89	6	225	3,920
Craven	300	191.13	8	2,613	1,142
Cumberland	300	208.72	6	1,537	1,839
Duplin	200			1,154	*680
Edgecombe	250	268.41	6	2,535	639
Gaston	250				†
Gates	200	140.35	6	2,034	499
Greene	200	140.40	6	1,236	440
Halifax	200	248.28	4	1,130	2,179
Harnett	200	180.10	6	763	981
Hertford	200	148.10	4	1,328	1,262
Johnston	200	182.70	7	3,865	1,708
Jones	200				†
Lenoir	200				*
Martin	200	200.00	6	2,447	849
Nash	200	196.29	5	3,308	1,170
New Hanover	300	248.85	8	478	780
Northampton	200	154.10	4	1,120	2,197
Onslow	200	155.68	5	110	3,164
Pender	200	176.94	6	509	1,719
Person	200				†
Pitt	300	302.08	9	3,911	2,333
Richmond	250				†
Robeson	300	274.00	6	763	1,973
Sampson	300	266.29	6	2,220	2,347
Surry	250				†
Vance	250				†
Wake	250	252.00	6	2,632	795
Warren	200	138.80	4	732	862
Wayne	300	221.55	6	1,318	824
Wilkes	250				*
Wilson	250			722	*350
Totals	$ 9,700	$ 5,833.32	165	51,912	42,231

*Work begun, but unfinished.

†On waiting list.

REPORT OF DIRECTOR OF STATE LABORATORY OF HYGIENE.

By C. A. SHORE, M. D., Director of the State Laboratory of Hygiene.

The following is a report of the work done during the year ending May 31, 1912. A total of 14,815 specimens were examined as follows:

		Positive.	Negative.
924	Sputum	268	656
547	Diphtheria	179	368
732	Widal	310	422
132	Malaria	4	128
48	Gonococci	27	21
199	Rabies	117	82
38	Pathology.		
92	Urine.		
10	Blood counts.		
10	Gastric juice.		
5	Pus.		
16	Miscellaneous.		
9,581	Feces		6,498
	Hookworm	2,342	
	Ascaris	577	
	Trichocephalus	182	
	Hymenolepis	112	
	Strongyloides	39	
	Oxyuris	9	
	Taenia saginata	2	
	Balantidium	1	
2,489	Water.		

These examinations are all made free of charge except the examinations of pathological tissues and gastric and urinary analyses. There is a general increase in everything except in the number of specimens of feces examined. As is well understood, this does not mean a decrease in the interest taken in and the efficiency of the campaign against hookworm disease. On the contrary, great progress has been made, but during the past year most of the specimens have been examined in the county dispensaries. I think it is but just to call attention to the assistance which the State Laboratory of Hygiene has consistently and gladly given to the Hookworm Commission and to its very efficient Secretary, Dr. Ferrell.

The increase of 569 samples of water means a very considerable increase in work. Each analysis of water involves numerous chemical processes and bacteriological tests, and represents in reality a very large amount of work. I believe that our water analyses far exceed in number those of any similar health laboratory in the country, and unfortunately many of these analyses are in themselves of little value. Contrary to a widely accepted belief, specific disease germs such as the B. typhosus never originate in water, and though water may convey them, they are very rarely isolated from it. An inspection of the local conditions should tell more about a private water supply than a laboratory examination can. The profession and the public should understand that the earth is an excellent filter and that underground water at a reasonable depth is almost always free from contamination. From this fact the conclusion must not be reached that the average well supplies good water. On the contrary, out of 549 samples of water examined in the past year from open-top bucket wells only 92 were clean and reasonably free from pollution. This pollution enters from the top either from surface water or from the handling of the bucket and chain. It is not difficult to get pure water, but it is difficult to keep it pure. The physician should be able to give practical advice about the private water supplies, recommending particularly the bored well and the hydraulic ram with a protected spring.

To my mind there is no more reason why the State should examine a private water supply free of charge than there is that it should examine a private milk supply. When, however, the water is sold to the public some control becomes necessary, and fortunately the laboratory analyses are of greater value. The source of the supply and the treatment of the water is known and the results can be interpreted intelligently. Our State has excellent laws controlling both municipal supplies and bottled waters. There has been a very great improvement in the latter and it is due directly to the exposure of the sale of certain dirty waters.

	Good.	Bad.	Questionable.	Total.	Per cent Good.
Pump wells	295	142	38	475	63
Bucket wells	92	366	91	549	17
Springs, private	57	76	26	159	36
Cisterns	24	6	6	36	67
City supply	721	53	110	884	82
Mineral springs	181	12	7	200	90
Creek water and samples of uncertain source	85	54	25	164	52
Boiler water				8	
Sewage				14	
Total	1,455	709	303	2,489	

In addition to the analytical work, the State Laboratory of Hygiene has given the Pasteur antirabic virus to 195 patients during the year, each requiring a treatment of 21 days. (Several of these did not take complete treatment.) We believe that it is possible to devise a satisfactory method of distribution which will permit the patient to remain at home and to have the virus administered by his family physician, but this will require a considerable outlay. A much more satisfactory method would be to abolish the disease, and this is practicable and is the ultimate solution.

It remains for me to report on the distribution of diphtheria antitoxin. We are fortunate enough to be able to report a definite and tangible accomplishment. Under our old contract we could secure a low rate on antitoxin only when sold to the county or city, and then only when given to the indigent. In practice it was found to be impossible to get the health officers to keep the records, and the requisitions were considered, with some provocation, a mere matter of red tape. The result was that very little was accomplished in reducing the price of diphtheria antitoxin. In August of last year we finally completed arrangements whereby we can distribute the antitoxin to any druggist or health officer at a very much reduced rate. The retail price is printed on each package and the distributor gets a net profit of 10 per cent. The retail prices secured are:

$0.50 for 1.000 units package.
1.35 for 3.000 units package.
1.95 for 5,000 units package.

The former corresponding prices were $2, $5, and $7.50. Before closing the contract we were informed by the United States Government laboratories at Washington that the antitoxin handled was of the standard strength. Up to June 1, 1912, we distributed—

1,264 1.000 units.
1,091 3,000 units.
1,218 5,000 units.

On this amount we were the means of saving to the consumer the sum of $12,638.00, which is more than twice as much as the annual appropriation to the laboratory.

THE PROBLEM OF THE FEEBLE-MINDED.

Address by Dr. Charles O'H. Laughinghouse, Greenville, N. C., at the laying of the cornerstone of the School for the Feeble-minded, at Kinston, May 6, 1912.

You have honored my profession by giving one of its members the privilege of speaking to you to-day. You have honored me most highly in that I am permitted to represent this the greatest of all professions. In behalf of this profession and in behalf of myself, permit me to thank you.

Forty-six years ago, North Carolina with the rest of the South was an impoverished land. Her fields were a mass of tangled weeds; her stock was gone; her buildings were in ruins; her commerce was stopped; her labor problems were a distorted mass of demagogism and violently prejudiced jingoism. The ravages of war had stopped not only her entire economic system, but her humanitarian desires; her educational facilities, aye, everything that makes for civilization, had to be cut to fit a condition that stark-naked necessity mapped out.

With marvelous swiftness, however, we have regained our feet. Our material development has been more than wonderful. Our educational recovery is a thrilling story of heroic endeavor. And the great miracle of recuperation is exemplified by the structure whose cornerstone we are laying here to-day.

The Soldiers' Home in Raleigh is a monument that bespeaks more inspiringly than language the State's deep-rooted love and gratitude for the needy and crippled Confederate soldier who fought for his native land. The State loves them like a mother. They are blood of her blood, spirit of her spirit, and it is with joy that she takes them in her arms and treasures them as the fathers of the present generation.

Out of the sacred blood of these heroes, out of their hardships, out of their love of country that forced them to the task of surmounting the seemingly impossible of 1864, has been born a patriotism, the new patriotism of a New South—the most wonderful thing in American history, a thing that is solving problems with a swiftness and satisfaction more wonderful than the problems themselves.

The struggle is wrestling with new conditions, the struggle is armed, but with new forces, and these new forces are permeated with an abiding passion of education, a Promethian love for humanity, and a divine enthusiasm to spend its energies and its money in perfecting the development of solid foundation of intelligence, social justice, health, and Christian charity.

These bedrocks of North Carolina's citizenship gave to us this school, in spite of municipal, county, and State education clamoring for means to meet their urgent needs; in spite of local and State wants and demands for the construction of good roads; in spite of the patriotic desire to construct splendid public buildings; in spite of the many things that materialism is crying for; in spite of all these and in spite of poverty—this new patriotism, this new humanitarianism, gave this Christly thing, and not a man, woman, or child in the State that will dare rise up and call it otherwise than blessed.

Medically speaking, we are living in the most wonderful time in the history of medicine. It is no exaggeration to say that more has been accomplished in the past eighty years to advance medical science, to prolong human life, to relieve human suffering, and to improve the human species than was accomplished in the past forty centuries. And with the lights before us we can safely say not only to humanity's weaklings and to humanity's sick, but to humanity's strength as well—that we are seeing the light of scientific medical truths which will indeed give all men, whether sick or well, the coveted privilege of getting well and staying so for at least a period of three score years and ten.

The general practitioner of medicine, the family doctor, is measuring up to his increased responsibilities. It is shown by the fact that Dr. Ira M. Hardy, a general practitioner of medicine, in an address before the Seaboard Medical Society at its meeting held here in this town in 1910, planted the seed that grew this school for North Carolina, and in doing so I verily believe it brought God's smile. This new patriotism above alluded to took this warfare for State betterment, devised ways and means, and here is his monument more enduring than brass.

Now that we have this school, let us discuss the only ways and the only means that will save posterity the need of it. Fearful facts should be treated with fearful seriousness, and until the public knows enough of social calamities to go of itself and learn more, the great holdbacks to human betterment will with a bludgeon of forbidden knowledge beat off every means that tends to the strengthening of posterity. Hence it is that I am speaking to you from manuscript, because my theme is too important and of too far-reaching purpose to be discussed lightly, inadvisedly, or without due thought and careful phrasing.

Insanity, feeble-mindedness, and crime are increasing in all the countries of the world, because like causes produce like effects everywhere. It is not the afflicted alone that are affected by the conditions, neither is it the prospective victims that are to be considered only. The danger comes to every man's door, the menace is to every one who walks the street. The amazing increase of feeble-mindedness and crime has an immediate bearing on the present population of the world, and to future populations it looks as if it were only a matter of calculation to decide when, because of the hitherto indifference to the great question of human breeding, normal human beings will become extinct.

This new patriotism, this new warfare for human betterment, has already sounded the battle-cry of change, and if the future listens it is resting securely in the confidence that the intelligence and moral conscience of to-day will eliminate the horrors of yesterday for the safety of to-morrow.

We know feeble-mindedness is not catching, but we forget that it is inherited; hence we consider ourselves safe as long as our own are not threatened. But there is too much truth in the statement that criminal acts are involuntary, too much truth in the doctrine that abnormalities of mind rather than viciousness of heart conduce to crime. Too much truth in the fact that feeble-mindedness begets feeble-mindedness, to satisfy ourselves that poverty, ignorance, and environment embody all the sources of the trouble.

Feeble-minded children, begotten of feeble-minded men and feeble-minded women, are roaming about the country to-day unsuspected as such. Amiable, care free, yet potentially they are criminals. No amount of home training, no amount of school training, no amount of law, no amount of prayer will change them. Nothing but segregation, nothing but constant surveillance, nothing but an environment that places them where they cannot when they would, will protect them and protect society against their crime, against their reproduction, against their power to hurt to-day with their irresponsible acts, and against their power to spoil future generations with hereditary taint.

A group of public-spirited persons were lately discussing feeble-mindedness and the causes of the popular reluctance to face the issue squarely. "The causes of the trouble," says one, "is that so many of us are feeble-minded." Whether there is all of truth in this accusation or not, there is truth in the statement that every man is feeble-minded when it comes to facing an issue, the causes of which he knows absolutely nothing about; hence I make the statement that, until the public generally is acquainted with the means and prevention and the necessity to prevent, the needs of schools for the feeble-minded will increase or decrease in exact proportion to public knowledge on the subject.

Ignorance of the question—ignorance, and nothing else—is responsible for the lack of law that permits a feeble-minded child to grow up without restraint. The child is allowed to marry and reproduce his kind, more feeble-minded and more dangerous than the parent. No system is devised to pick out from the community persons so afflicted. No law to prevent their untrammeled movements. We as yet have no way of recognizing or even estimating the number in the State.

Here is a proposition of vital importance to our State's posterity, and as usual for human betterment. Nothing can solve it except the conjoint labor, the conjoint sacrifice, the conjoint individual examination of these unfortunate children by J. Y. Joyner and his army, and the family doctors in the various portions of the State. Oh! We teachers and we country doctors—poor, insignificant worms of the dust that we are—here is another load that we must carry; and we will carry it, even though we get for our immediate selves nothing but the honor of being low privates in the ranks of a high calling. We will carry it even though we are but privates in our respective professions, because these two professions will give to us enough of knowledge, enough of patience, enough of power, enough of that new patriotism, enough of the grace of God to plant a public sentiment, to nurture it, to develop it, to teach it, to guide it, until correct facts become common knowledge.

Although it took philanthropy a long time to even take up the relief stage, aided by this new patriotism we will make a public sentiment that will take further steps.

No matter how little the past may have done for the present, we will teach the present sufficient knowledge to engender and perfect its proper duty to posterity. With this outlook, with the daily consummation of our full and our individual personal duty, degeneracy will become less depressing as we disseminate public knowledge.

Statistics show us only the feeble-minded persons in institutions. We have no way of recognizing and correcting those outside. Public knowledge will ere long realize the necessity of enacting a law requiring all feeble-minded persons, whether in institutions or at liberty, to be registered by the State. Family physicians will eventually be required to make reports of suspected cases, which report will carry with it the command to have the suspect passed upon by a commission possessing the special knowledge that will enable adequate justice to be meted out to the suspect as well as society. Every possible agency that can be utilized will eventually be created by law into a great composite force whose purpose will be to separate and segregate the moral and mental cripples from the rest of humanity.

I believe the day is coming when public school teachers will have blank forms for making returns on peculiar cases. Such as extraordinary inability to learn, persistent misconduct in spite of correction or kindly counsel—in fact, all those cases sufficiently abnormal to attract attention to teachers and fellow-students will be passed up to a commission.

Feeble-mindedness is a question of childhood. Taken at the proper time, many defective children can be greatly improved; but when they approach adult age improvement is not possible.

We could and we will do much more than we are doing with the facilities we have. For example: the judges of our courts are of the highest order of man—humane, sympathetic, charitable—yet, they know and do their duty as they see it. They could do much towards solving the problem if they had the means and could be given a knowledge of the relationship of feeble-mindedness and crime. A child accused of a misdeed and arraigned before a court should be sent to the State's Commission for Feeble-mindedness. This commission should report back their findings, and the judge should dispose of the child accordingly. Everybody recognizes an idiot, but none save an expert can recognize what is known as a high-grade defective. Yet, the high-grade defective is more dangerous than the idiot, because this class of imbecile has initiative and is not suspected of his weakness even after the commitment of his crime. Characteristics of feeble-minded persons are ofttimes most deceiving. One who does not know would naturally expect to find them with low brows, furtive looks, vicious appearance, especially after developing criminal tendencies. They might be expected to have stupidity written on their faces. On the contrary, they are ofttimes amiable, bright on the surface, and good tempered. A high-grade defective is almost always a likable person from the ordinary sociable viewpoint. The lower order are gloomy, retiring, taciturn, but their traits are noticeable from their infancy. Listen: a boy born of normal parents, with a normal family history; the mother noticed that he did not walk as early as other children; that he did not speak until he was two years old; even then his speech developed slowly. As he began to have understanding, he avoided other children, did not play with them as did his brothers and sisters. He was a shy, morose child. He did not work like other children; all of his processes seemed to be strangely different. The teacher noticed how difficult it was to hold his attention to any one thing; his mind fairly flew from one thing to another; it could never be kept on a lesson. Even the children noticed that he would never finish a game. It was plain after close study that the child was not like other children. At ten he stole money from his mother, stayed out at night, and next day he was found far away from home. From that time on he became a runaway, an incorrigible, getting whatever he desired, even if he had to steal it. He was taken out of school, put under a private instructor, who reported back that it was impossible to get him to put his mind on anything not to his liking. Before the age of seventeen his bad character was confirmed; he sought nothing but evil companions; began drinking before he was fifteen. Now, there is only one end for this boy. Yet, he will listen to any one who cares to reason with him, but neither good advice nor the graphic recital of the fate that will befall him makes any difference. Whether he is kicked or beaten or coddled and pleaded with for his misconduct, the result is the same; he is alike indifferent to kindness or to cruelty.

Now, if this boy had been taken from school when his teacher and school companions first noticed that he was not right, and had been put in a State institution exclusively for just this class of mental defectives, where he could be patiently watched and wisely studied, the lesions causing his mental defect might have been corrected, and thereby one criminal less would have been let loose to prey upon society, marry, beget more of his kind, and start a strain of feeble-mindedness that will cloud the stream of posterity through the future years.

The remedy is simple, but the application most complex. Criminals with normal minds who come to crime through early neglect, environment, or are actuated to crime in the first instance by immediate and pressing need, may be rescued and reformed; but adult criminals who are instinctively criminals because their feeble minds have not the power to exercise constancy of purpose or restraint, are as helpless as ships without their rudders, and nothing can be done for them but to colonize, control, restrain, and prevent their reproduction. The rest is the job for the teacher and the doctor, and they can succeed no sooner than the public is taught the seriousness and importance of the problem.

Just one more phase and I am done. This army of feeble-minded persons furnish the recruits, not only for the ranks of the criminals, but the material for the White Slave trade. The paupers, the sots, the ne'er-do-wells and all others of society's misfits are furnished from this army. Their incapacity proves that they eventually become public charges in one way or the other. Scientific investigation of criminals, paupers, prostitutes, and drunkards proves that the largest half of this class has from childhood been mentally irresponsible. Actual tests in reformatory schools both for boys and girls show that more than 25 per cent of them are distinctly feeble-minded. What the public forgets is that these unfortunate people are not responsible. They can no more live in accordance with the conventions of society than can the cats and dogs in the street. So, what should be the public policy toward this question?

We are spending countless sums of money convicting and acquitting persons who are accused of crime; but here is a group of criminals as undeserving of punishment as the man who shoots his neighbor by accident. Thousands of dollars were spent to decide whether Harry Thaw was a criminal or crazy, simply because his family could afford it; but here is an army of lawbreakers to whom it is a serious question whether their punishment be sixty days in jail or permanent detention where they will be happy and self-supporting. Nothing is done to determine their responsibility, and the magistrates of the law deal out their medicine measured by the scales of legal justice, and they do it without blushing. We doctors hold our tongues and simply pray, "Father, forgive them, for they know not what they do!"

The thing for the State to do is to put into their schools for lawyers a chair that teaches at least the A B C's of the causes of pauperism, debauchery, and crime. And no judge should be permitted on the bench until he perfects himself along these lines. Having done this, stations where the mental defectives can be studied and properly cared for should be established.

If defective, they should be colonized and guided to self-support and happiness, and given the opportunity to lead as natural lives as those under surveillance can lead, with the one restriction that they must not become parents. We are looking not to an immediate solution to the difficulty, but to the gradual elimination of this social waste. Our educational plans should subject every suspicious child to expert diagnosis. If he be merely backward, he will be placed in a special class; if he be a border-line case, he must be watched. The moment he develops evidence of mental difficulty, the fact must be made known at the proper time and in the proper way. The parent should be informed, but all this is useless until a public sentiment is engendered that will put appreciation instead of rebellion into the parent's heart. Law is not public sentiment; public sentiment is law.

True, such a policy as above outlined will cost money, but the neglect to inaugurate it will cost more, to say nothing of the moral and social cost, which, unless reduced in some way, will in an incredibly short space of time increase the burden of crime, pauperism, and disease to where it will become well-nigh insufferable.

The expense of a system to eliminate the product of mental irresponsibility will be compensated for by the reduction in the population of prisons, asylums, county homes, reformatories, hospitals, and similar institutions. This within itself will more than pay the price, and when we recall that many defective children are trained into self-supporting adultism if kept under direction, we can see that the expenditure of dimes will actually save dollars.

We have reasons to believe that such a policy intelligently developed and wisely practiced will be evolution's plan by which we will rid society to a large extent of its feeble-minded population, and thereby reduce and simplify our problems of pauperism, prostitution, disease, drunkenness, debauchery, and crime.

NATIONAL DETERIORATION BY NEGLECT OF PUBLIC HEALTH.

An address by J. L. LUDLOW, Sanitary Engineer, Winston-Salem, N. C., before The Southern Sociological Congress at Nashville, Tenn., May 7-10, 1912.

Dr. J. A. McDonald, managing editor of the *Toronto Globe*, a noted publicist and earnest advocate of sociological activities, in a recent address in New York City at the annual meeting of the Association of Life Insurance Presidents, in an appeal for universal peace, gave voice to the following expression:

> "Have you seriously considered the reflex influence of war on the physical life and moral progress of the Nation? Forget for a moment the romance of war stories, the appeal of war songs, and the flaming perorations on the heroism and glory of the battle-field. Think rather of its biological reaction. Estimate the inevitable results of killing off in battle or by disease your men

of high courage and devotion, or of segregating in military camps tens of thousands of the fit specimens of your young manhood. Judge what it means to breed a new generation from less than the best of the generation that went before. If like begets like, if the laws of generation hold and are inexorable, if blood tells, or, to speak more accurately, if protoplasm tells, will you gather physical vigor out of a generation bred from depleted vitality and diseased blood?

"History tells what war meant for old Rome. The best of the breed fell in the wars of the Cæsars, and at home from less than the best were bred the fops and dandies whose generation meant the decline and fall of the Roman Empire. It meant the same for France; the flower of the race were drafted into Napoleon's armies; they fell on the battle-field, they died in the trenches, they rotted on the march, and two generations did not make good the loss. We know what it meant for Britain. 'Send us the best ye breed,' was the insatiable call of war. The best were sent. They fell by the sand drift, on the veldt side, in the fern-scrub, and many of them left no sons to 'follow after by the bones along the way.' Blood was the price of admiralty. Britain paid in full, paid with the best. The awful cost is seen to-day in the hopeless face of the common city crowd, and in the desolateness of the moor and glen, where once were bred races of giants and heroes.

"And has America no experience, no warning? Men ask, sometimes pathetically, where are the men of heroic mould who gave distinction to statesmanship and literature and life a generation ago? Where are the hundred orators of Boston, the new generation of poets and philosophers and public men, to snatch up and carry on the fallen torch that once lighted New England? The answer comes from the Memorial Hall of Harvard University with its silent voices. Like answers come from Illinois, from Indiana, from Missouri, from Kansas, from Kentucky, from chivalric old Virginia. Six hundred and fifty thousand men of the North, and four hundred thousand men of the South, the best the Union bred, went out in that awful slaughter, and not yet has life found in that loss a gain to match.

"Tell me, what has been the loss to this Nation of the blood and the life poured out in that, your one great war? It is not alone the loss of the men who were, but the still more unspeakable loss of the unborn heroes and leaders who might have been. The bounty-jumpers, the skedaddlers, and the mercenaries went on producing after their kind, and their breed are your grafters in politics, your plunderers in business, and your vampires in social life. Is it any wonder that so many places are vacant or badly filled—places in business, in finance, in politics, in education, in the State and in the church, where none but men of integrity and power should stand?

"This, then, is my word to you: Hear the call of the dead who fell on battle-field and died in hospitals and languished through the ruthless wholesale murder of the nations. They call to you who stand in the place of honor that you should join hands to make wars to cease and to dig this insufferable burden of the world's sorrow once and forever out of the way."

In thus portraying the horrors of war between nations with its resulting influence on racial development, Dr. McDonald has painted a picture of another warfare which, to an audience assembled to consider vital social problems, must at once present itself as one of even more far-reaching results to the welfare and development of the human race and of momentous import to Nation and to State. A warfare of unceasing activity dating so far back in time that the mind of man can barely comprehend it, but growing more and more intense as the gregarious instinct of the human race has been indulged, until in this age and in our own country, with our large and growing urban population, it involves problems of National welfare of paramount importance. A warfare in which the whole human race is involved and which has claimed its victims in tens and even hundreds of thousands where the warfare of nations has claimed its thousands. The warfare of the myriad hosts of the invisible microscopic enemies to human life which is eternally waged against the peace, the comfort, the happiness, and the health of man, with a resulting handicap to racial development that can be measured neither in figures nor in mental conception; which can only be successfully combated through the organized agencies of public-health activities. This is the warfare which I would present to your thought and attention.

The deterioration of a nation or of a race, or of mankind as a whole, may not of necessity be measured in specific terms of actual impairment. In the design of the Creator man is a progressive being, ever advancing in physical, mental, and moral attributes in the working out of his final destiny. It may, therefore, in truth be said that every influence which tends to retard the normal development of the human race is in itself an element of deterioration of the race. And, by the same token, any failure to aggressively conserve that already accomplished, or to intelligently promote all the known means of normal racial advancement, may rightly be considered to be at least the equivalent of racial deterioration.

To measure the development of a nation or its lack of development involves a problem of great complexity. The assets of a nation are widely varied in character and cannot be confined to the physical and material. It is the people, and the people alone, that make the State. No nation can be great and prosperous without loyalty from its citizenship. Patriotism and valor, backed up by physical and mental fitness, alone can save the State in many of the vicissitudes through which it travels in the race for national glory and achievement.

The glory of ancient Rome was due directly to the character of her citizenship. When, through aggressive warfare, the patriotism and valor as well as the physical and mental fitness were expended in the heroism on her battle-fields, her glory departed, though the natural physical and material assets remained unimpaired, and a weakling among nations replaced her former grandeur.

The real and effective wealth of a nation is to be found in the character and caliber of her men. Without men physically, mentally, and morally fit, the value of all the so-called natural resources are greatly depreciated. It is only through the vitalizing touch of man that value is given.

During recent years intelligent, patriotic citizens have given much thought and study to the problems involved in the conservation of natural resources and preserving to the utmost the natural elements of wealth to the use of future generations. Organizations have been formed to cultivate in the public mind a due sense of the sin of wastefulness and of wanton use of the essentials to human life and happiness that were bequeathed by the Creator to the purposes and use of mankind. Governmental policies have been inaugurated to both promote and pursue this purpose, and to quite a considerable extent it has become a fixed public policy.

But of what avail will such a policy and its accomplishment be unless there are to be future generations who, through physical and mental attainments, shall be capable of applying the magic touch of intellect and brawn to the treasure of the land, forest, and mines, which, only when utilized and adapted to the wants and conveniences of man, can be transformed from simple inanimate matter to potential factors of wealth?

Whether future generations shall be inferior or superior to present generations has ever been and forever will be a present problem. It is a problem which is now exciting grave apprehension to many thoughtful persons. It is the great problem of organized society, and its successful solution is to be found in public-health work to an extent equal to all other activities of civilization combined. As public-health work is pursued with intelligent and energetic enthusiasm and vigor, so may the successful results of all other lines of human endeavor for the progress and betterment of the race or the Nation be measured. It is a dual problem of eugenics and euthenics. Breed from the best and nurture to full and complete development must be the guiding principle and practice of society, or deterioration shall mark the history of the Nation.

Next to the primary instinct of self-preservation which is common to all forms of animate creation is the instinct of procreation. In the case of man this primal instinct has been developed into a selective desire or dominant purpose. In races of men and of governmental units it has become a State problem of preëminent importance. In the minds of thoughtful men of intelligent races, and of organized society, it is a recognized obligation of citizenship, with a responsibility attaching of momentous consequences. Not alone to reproduce numerically well, but morally, mentally, and physically fit, is the object and purpose of transcendent importance to racial hopes and aspiration.

In the Anglo-Saxon race the world has to-day the highest type of civilization known to modern history. It has a highly developed manhood of honorable intellectuality and of vigor and action; men of achievement and of acquisition; apparently increasing numerically, and it is hoped and generally believed improving also in physical development and intellectual attainments. Yet Galton reckons that England at its best falls two grades below the highest intellect of Athens, and that England produces but one man of supreme eminence where the older culture produced two hundred.

With the prolonged period which marks the unit of time in the development of man or a race of men, it is very difficult to measure in retrospect distinctive advancement; but with the accumulated knowledge of man and his development, and of the sciences which pertain thereto, it is not an impossible task to provide against racial decadence and toward a higher standard of racial development. While it may be impossible to force a numerical increase in births of the superior and fit individuals, it is within the easy range of public-health accomplishments to protect such and develop to adult life with health and vigor thousands of fit specimens of infants and youths that are being sacrificed to the ignorance of hygienic laws and to the lack of public-health activities. And it is neither impossible, impracticable, nor unreasonable to force a numerical decrease in births of the palpably unfit.

The progress of man is the product of two very different, though closely correlated, agencies. The one is the hereditary imprint of generation to generation, a biological process of evolution, which marks the intrinsic character of man. The other is largely independent of immediate parentage or the individual himself; it embraces the change in knowledge, possessions, and acts of man, which is termed Social Progress, and determines the environment of individual and collective man.

With the development of the human brain, its capacity to think and to accumulate knowledge, and to hand down from generation to generation the results of every advance by means of oral and written tradition, and to translate ideas into science, social progress has been comparatively rapid, and the importance of providing mankind with a proper environment through sanitation, education, and good government has become a fixed policy of most civilized people. But whereas the unit periods of such social progress may be written in centuries, the biological factors in human evolution are measured by ages; hence the greatest human development that is witnessed by a single generation results from the environmental conditions which mark social progress rather than through biological factors.

The students of the science of Eugenics see a fruitful field of action toward promoting a higher standard of physical efficiency and resistance to disease in the human race, by some system of regulating marriages and untoward hereditary tendencies in the initial conception of human life. The advocates of the science of Sanitation and of Public-health Activities, sometimes referred to in its comprehensive conception as Euthenics, in contrast with Eugenics, would counteract the physical deficiencies of the human race by providing such conditions of living environment, and promoting such living habits, as to build up the individual and racial resisting powers of the human body to the attacks of its natural enemies, so prevalent in the form of microscopic life, and at the same time promoting conditions that will tend to reduce the prevalence and activity of the germs of disease.

While the theories of the Eugenics school may be essential to the ultimate betterment of the human race, and indeed may be its one great hope of saving the human race from imbecility, poverty, disease, and immorality, yet, for securing immediate relief from the excessive ravages of such diseases as scarlet fever and diphtheria, tuberculosis, pneumonia, typhoid fever, and kindred types so fatal to mankind, little hope is offered therein, except in so far as a higher average of intelligence begets a more universal respect for public-health activities and a greater community regard for hygienic living habits and conditions.

On the other hand, the practice of Sanitation, used in its comprehensive meaning, offers immediate results, and has already achieved during a brief period of active promotion a vast reduction in sickness and premature death, with a consequent marked reduction in poverty, and perhaps crime, and has added vastly to the sum total of human happiness and national achievement.

It has been said by an eminent authority that it is within the power of man to rid the world of every form of parasitic disease. Admitting this to be true, can the advancement to the human race be measured when it shall have been done? There is much in the recent experience of our own country that teaches that it can, and that the measure of the progress to its ultimate accomplishment depends upon the intensity of the response to the Call to Public Health.

This, then, sounds the Call to Public Health, and as this call to social service is answered so will the harvest be in the advancement and glory of the Nation, the conservation of her resources and her advancement or deterioration as the life of a nation is measured.

And again, let it be said, there is no national possession that is reasonably comparable with the life and health and physical efficiency of its people. Again let me say, that except through the touch of the mind and hand of man there can be no wealth in anything material; hence the true conservation of resources of the State and of the Nation has its beginning and its ending in conserving the life and health of its people, with the attending moral and spiritual development which will logically accompany a nation's response to the Call to Public Health.

As the advocate of universal peace among nations, who was quoted in the outset, would have you hear the call of the dead who fell on the battle-field through the ruthless wholesale murder of the nations and forever banish an insufferable burden of the world's sorrow by making wars to cease, I would have you hear the call of 265,000 sorrowing mothers who each year in the United States mourn the death of an infant ere it has reached the first anniversary of its birth; of the 50,000 children, the hope of the country, who each year are made innocent victims to the ravages of diphtheria, whooping-cough, measles, and scarlet fever; of the 150,000 victims of tuberculosis annually at an age when life is dearest and when life and service is most needed by dependents and by the Nation; and of the 136,000 victims of pneumonia annually, largely from bad housing and unhygienic living habits.

The large majority of all these deaths are not alone premature, but they are preventable through public-health activities.

In the correlation of sociological efforts public-health work must be given the place of first importance. Its reward is to promote that which is dearest to individual life and most important in its relation to all other agencies for the improvement of the race and the development of the Nation. The penalty for its neglect is to largely negative the results of all other branches of social endeavor, and to accelerate the conditions inherent to community or national life, which, permitted to go unchecked or without effective control, make for lowered efficiency of the individual, lowered standards of community achievement, and marked deterioration of the race or nation.

THIS BULLETIN WILL BE SENT FREE TO ANY CITIZEN OF THE STATE UPON REQUEST

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VITAL STATISTICS

County Commissioners, County Boards of Health, City Fathers, what are you hiring health officers to do? To make health speeches, write health articles for the newspapers, visit the county homes and jails? These are merely the means to an end. It makes no difference to you about methods: what you want are results—a reduction of your death rate. Keep your eyes on the end; forget the methods; that is the health officer's business; it is yours to see that he reduces the death rate. Health work either favorably influences death rates or is worse than worthless.

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MRS. ISAAC MANNING,
CHAPEL HILL, N. C.

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A Further Statement in Regard to the Delayed Bulletin

The editor, after looking more thoroughly into the causes responsible for the delay of the July Bulletin, finds that it was due in largest measure to circumstances of an unavoidable nature, for which the Public Printers were not to blame. We make this statement in justice to the Edwards & Broughton Printing Company.

CORRECT CONCEPTION OF PUBLIC HEALTH—ITS EVOLUTION

The Indifferent, Fatalistic, Enthusiastic and Rational Mental Attitudes to Public Health

The happy girl of sixteen, in her exuberant health, accepts her greatest blessing as a natural inheritance, as natural as the sunshine, and gives it as little thought. Her attitude to health is one of indifference.

Time passes and girlhood fades into motherhood; death knocks at her door; her baby answers the summons; blinded with the bitter tears of sorrow, she falls on Providence. Her attitude to health is one of fatalism.

Time moves on, and observation, sharpened with the friction of the years, discerns relationships between preëxisting and subsequent disease, between environment and disease, and slowly there is evolved a consciousness of control over disease producing factors. Health fatalism recedes as the light of the most powerful fact of the nineteenth century—the preventability of diseases—enters her mind; the spirit of the dead baby calls her attention to the terrible meaning of needless death, awakens her conscience to its part in the great conflict of life and death, and a raw recruit enters the army of health workers. Her eagerness to do something will not permit of the development of mature plans. The desire to serve overbalances ability to serve; public health is more philosophy than science. Her attitude to health is one of uncoördinated enthusiasm, characterized by spasmodic and sporadic efforts to prevent disease. Her attitude to health is one of enthusiasm.

Finally, with the novelty of the new idea worn off, with the sedative effect of the fatigue of sporadic and exaggerated effort, cold reason resumes her throne, and puts the blunt question: Where are the fruits of your labor? *Exactly* what do you seek? What *evidence* is there to indicate the value or futility of your effort? The health enthusiast begins to think, to seek some fixed point from which progress may be measured, and vital statistics as an absolute necessity in health work is recognized. With that discovery public health philosophy gives way to the science of public health, and exuberant enthusiasm to steady, rational effort. The attitude to health is rational, scientific.

These four mental attitudes to health—the indifferent, the fatalistic, the enthusiastic and the rational, scientific—are found in varying proportions as ingredients of the public opinion of different places, and so, in accordance with the dominant mental attitude, is the attitude of the government to health work indifferent, fatalistic, enthusiasic or rational.

The indifferent and fatalistic types of mind are passing rapidly into extinction. God speed them.

The enthusiastic type of mind is still rare enough to be appreciated when found. This type makes a good supporter, but a bad counselor for the health officer. People of this type are visionary; they have schemes for cleaning up the town or county in less time than it takes to bathe a baby; they regard a board of aldermen or commissioners as an absolute and not as a representative power; they waste valuable energy in vain endeavor to scale the heights, rather than take the more circuitous path of popular education that will surely in the end bring them in sight of the promised land; they appraise a health officer by the amount of appropriation that he is instrumental in securing, by the number of speeches he makes, and by the amount of literature he scatters, some by the wayside, some upon the stony ground, and some upon good soil.

THE RATIONAL ATTITUDE TO PUBLIC HEALTH WORK

The Social Organism

Health is something we are in the habit of associating with living bodies or organisms. If we could grasp, mentally, society as an organism, see society or community life in much the same way that we see any animal life, it would be much easier for us to grasp the meaning of public health and public disease. As a matter of fact there is a very close analogy existing between the organization of a living animal or organism, and the organization of our public or social life. This analogy is so plain and so helpful in clarifying our ideas regarding social conditions that I shall endeavor to point out the resemblance. Let us briefly look at society as, what Herbert Spencer called, a "social organism." But, to see society in its close resemblance to an organism we must look at the social and the individual organism side by side.

Both individual and society are made up of a large number, millions, of structural units. The structural unit of an individual organism is a microscopic, living body called a cell; the structural unit of the social organism is a visible, living body called a person. Both the little unit and the big unit, the cell and the person, possess the four characteristic properties of life, although in some of the cells these properties are in very elemental amount. The four fundamental properties of life are response to stimuli, movement, nutrition, and reproduction. Moreover, certain cells, like certain persons, may specialize. For example, there are cells which devote most of their energy to thought, the nerve cells, others that devote most of their energy to lifting and pulling, the muscle cells; there are persons who give most of their time to mental work, others to manual labor, etc., corresponding to the cellular analogues in individual organisms.

Likewise, in both individual and social organism, there is a tendency of those units, cells and persons, who are engaged in similar tasks to get together and to form the cell classes or organs in the one, and the social and industrial clubs, unions, and federations in the other. "Birds of a feather will flock together." The organs of the body have their counterparts in the classes of the social organism.

By physiological laws the various organs are bound together into systems, and the systems of organs into that masterpiece of nature—the image of the Creator. By natural laws the welfare of the individual or of the class is bound up with and made a part of the welfare of the entire social fabric. Two thousand years ago Saint Paul gave inspired expression to these natural laws when he said, "No man liveth or dieth unto himself." And again: "For as we have many members in one body, and all members have not the same office; so we, *being* many, are one body, in Christ, and every one members one of another." Just as these principles are realized in the everyday life of society, to that extent is society civilized.

Then, in conclusion, we may put it down that, by creative conception and natural law society is just what Herbert Spencer called it, a "social organism."

Health and Disease

Are relative terms that relate to the vital condition of organisms. There is no sharp line of demarcation between a condition of health and one of disease. No individual who has passed from a state of health into one of disease can say just at what time health disappeared and disease began. We have heard it said that a physically perfect, and absolutely healthy leaf was difficult, if not impossible to find. It would be equally difficult to find an individual in perfect health, for one apparently perfectly healthy would show, on the careful examination of some one qualified to make a thorough examination, a certain amount of disease. Then, health and disease being relative terms, and there being no natural and fixed standard of either health or disease, in order to discuss such conditions of organisms, and not be misunderstood by each other, we must agree upon just what we mean by these terms, that is, we must create an arbitrary standard of health and disease. Such is necessary, for as disease is nothing more than a departure from health, how shall we recognize disease unless we have some fixed condition from which to measure the deviation?

The Standard of Health

An individual may be said to be healthy when his vital activities in general correspond with those of the average person; conversely, an individual is unhealthy when his vital activities in general deviate from those of the average person. This definition of standard individual health does not preclude from the list of the healthy those individuals with some special physiological peculiarity, such as a pulse of under 50 or over 100 a minute, or a gastric juice with 33 per cent more acid than the average person's gastric juice, or a man 6 feet and 2 inches instead of the average height. An unhealthy person must have not one constant physiological deviation from the average, but a combination of deviations, not constant but temporary and irregular as to time. Bearing in mind the few qualifications of our definition above indicated, we may define individual health as that vital condition of an individual organism which corresponds to the vital phenomena of the average person.

Acting upon the principle that the mind works easiest in the old ruts of mental habits of thought, we may now pass from the standard of individual health and cast about for a satisfactory standard of community or public health. The analogy that we have so far followed will support us yet another step, and permit us to define a community, town, county, or state—a social organism—as healthy when its vital conditions correspond to those of the average social organism or subdivisions of our national or state body politic. Just as it would be impracticable to select the healthiest individual as our standard of individual health and classify everybody else as unhealthy because they did not approximate the standard, so it would be creating an ideal too impossible of attainment to hold up the healthiest community, town, or state before all other communities, towns, and states as the reasonable standard by which their health should be judged. It is well enough to hitch wagons to stars, provided the drivers can keep their minds free from the depressing influences of the practical world about them; but, too high an ideal may beget discouragement unless it is cherished by those whose faith can ascend mountains. No, we must not take the health conditions of the healthiest community as a standard of community or public health, but, just as in selecting the health of the average individual as the standard of individual health, so we shall select the health of the average community as the standard of health in the social organism or the standard of public health. All right then, a community, county, or state is healthy when its vital phenomena correspond with the vital phenomena of the average community, county, or state. But, and right here we cut into the kernel of this article, what do you mean by—

The Vital Phenomena of the Community, or Signs or Symptoms of Public Health or Disease?

A true story will lead the way to the answer of this all important question.

A short time ago a gentleman came into the office and introduced himself as representing the Baron Hirsch fund of millions of dollars, which was bequeathed for the social and industrial advancement of immigrant Jews to the United States. The visitor stated that he was engaged in investigating agricultural and health conditions in the Southern States, and would devote eight or nine months to his task. Some time previously a colony of Jewish immigrants had been placed in Texas; the colony had not been there long before several of them died of malarial fever. Being unaccustomed to malaria, the disease had all the terrors to the newly colonized immigrants of a new and strange disease. The colony at once disbanded and left, and the property had to be sold at a loss. The board of directors of this fund were, therefore, interested in the health conditions of the South as well as in her agricultural resources.

The gentleman stated that they would locate several colonies, and each colony would be composed of from 50 to 100 Jewish families and equipped with coöperative banks, stores, and other conveniences of a thoroughly modern, progressive community. He said that they proposed to purchase from 5,000 to 50,000 acres of land and to invest from $500,000 to $1,000,000 in each colony.

This gentleman had begun his investigation in Washington. He had first gone to the Department of Agriculture and secured very full and satisfactory information with regard to agricultural conditions in the Southern States. He had been directed to call on Dr. Cressy L. Wilbur, Chief Statistician of the Bureau of the Census, as the man from whom he could get information as to the comparative healthfulness of different sections of the country and states. When he made this request of Dr. Wilbur, that official pointed to a large map of the United States hanging near at hand on the wall. Said he, "You see the map is made up of some states in red and others in white; ask me anything you wish about the health of the states in red and I can give you exact information. As to the health of the states shown on the map in white, there is no man on the face of the earth that can tell you anything." The red states were in the northeast and west, and the white states in the south.

From Washingon this gentleman began a tour of the Southern States. When he arrived in Raleigh he first called upon the Commissioner of Agriculture and obtained information from that official regarding the agricultural resources of different parts of this State. Following his visit to the Department of Agriculture he called at the office of the State Board of Health to inquire about health conditions of the different sections and of the various counties of North Carolina. After the usual introductory remarks our visitor began to ask some very direct and significant questions. The writer will, as near as he can remember, reproduce these questions and the answers that he made to them.

"Which is the healthiest section of North Carolina?"

"There are no facts at hand to justify an answer to that question."

"Which is the healthiest and which is the unhealthiest county in North Carolina?"

"I don't know."

"Do you mean to say that this office, representing the State of North Carolina, entrusted with the heavy responsibility of studying health conditions in the State with a view of informing the public about the prevalence of the different diseases, and suggesting appropriate remedies, admits that it does not even know the distribution of diseases in the State, does not know the county most needing the assistance of the State Board of Health, the county least needing this assistance, the county where the most tuberculosis exists, the county where the most typhoid exists, the county where most babies are dying, etc., etc?"

"I am ashamed to admit that this is true."

"Well, why don't you know these things?"

"The information which you seek can only be obtained through a law requiring the registration of all deaths on a regular blank form which gives, in addition to the cause of death, the race, sex, age, social condition, and a few other less important data concerning the decedent. If all deaths occurring in the State were so registered and properly compiled in a central office, then I could tell you the county in which the largest number of people per thousand of the population die annually; the county in which the smallest number per thousand of the population die annually; I could tell you the county in which the average age attained at death was greatest, and the county in which the average age attained at death was least; I could tell you the county where the deaths for a given number of the population was greatest from consumption or from typhoid fever, or from malaria, etc.; I could tell you the counties freest from these diseases, etc.; in short, I could give you the facts about the comparative health of the different sections and various counties of this State on which any intelligent person could reach positive conclusions regarding the healthfulness of any part of North Carolina."

"How can you do satisfactory health work without this knowledge?"

"We can't. All we can hope to do is to enforce the State laws protecting public water supplies, to maintain a State Laboratory to analyze the public water supplies, to consult with and advise county and municipal authorities about local health matters, and to carry on a general educational campaign along sanitary lines, trusting that widely disseminated information as to the methods of preventing the more important diseases is resulting in the saving of many lives, and hoping some day to get the people to the point of seeing the importance of the knowledge that you seek. Treating a sick public without the facts that you desire is just about as unsatisfactory as a physician's treatment of a patient whose symptoms are unobtainable."

"I see. What you need then in North Carolina is a vital statistics law requiring the registration of all births and deaths. Such a law would give you the information that I want, and information that is absolutely *necessary* to the intelligent prosecution of the work of the State Board of Health."

"Exactly. Vital statistics are to the health officer just what symptoms of diseases are to a physician. Through the presence of symptoms the physician recognizes disease and studies the effect of his treatment; through vital statistics the health officer recognizes the sick social organism, the sick town, county, or state, and estimates the effect of health administrations by the reduction of death rates."

Conclusion: The vital phenomena of the social organism, of the public, are its vital statistics. The vital statistics of a community, town, county, or state are the only known means of reaching intelligent conclusions regarding the health thereof.

Standard of Public Health, or the Vital Statistics of the Average American Community

We have seen that the vital phenomena of community life are the vital statistics of that community. We have seen that a proper standard of public health is the vital phenomena or statistics of the average community. We have only to ascertain, then, from the Bureau of the Census of the United States government, what the vital statistics of the average American community are to have a standard of public health by which the health conditions of all other communities may be judged.

Our standard may be simplified and made much easier of application if we include those vital statistics only that are really needed as a sanitary index to the health of a community. This, of course, would embrace the general death rate, that is, the number of people per 1,000 of the population who die each year; the percentages of death under 15, children; between 15 and 60, wage earners; and over 60, the old; the number of deaths per 100,000 of the population from diseases, the great importance of which rests upon the large number of lives they destroy, and from the further fact that they are of a clearly demonstrated preventable nature, such diseases as tuberculosis, typhoid fever, malaria, summer diarrhœas of children under two years of age, and the contagions. Our standard need not embrace the death rates from a given population of such diseases as chronic arterial disease, Bright's disease, organic heart disease, cancers and a few others, for two reasons: First, because these diseases bear such a close relation to the age periods that the age periods of deaths would indicate their contributory role in the general death rate; second, because these diseases are, as yet, beyond the jurisdiction of sanitary science, not preventable, and, therefore, not a concern of the health officer.

Probably the best way in which to indicate the use of our standard is to take a concrete case and apply it. The application is best made in chart form, with four columns, the first containing the various causes of death, the second, death rates of the community, town, county or state under investigation, the third, the average death rates in the United States, and the fourth the debits and credits as indicated by the minus (—) and plus (+) signs.

The following tables are the vital statistics method of studying health conditions applied to a North Carolina city. The figures are not fictitious but the actual death rates of a city for the year 1911:

DEATH RATES OF X.

Death Rates.	In X.	In Average City of U. S.	Debits and Credits.
General per 1,000	27.5	15	—12.5
White per 1,000	25	16.5	—8.5
Colored per 1,000	40	26.2	—13.8
Tuberculosis per 100,000	270	160.3	—109.7
Typhoid Fever per 100,000	55	23.5	—21.5
Diarrhœa under 2 yrs. per 100,000	215	100.8	—114.2
Whooping Cough per 100,000	50	11.4	—39.6
Measles per 100,000	25	12.3	—12.7
Scarlet Fever per 100,000	0	11.6	+11.6
Diphtheria per 100,000	20	21.4	+1.4

If the death rates above given are converted into absolute figures for this city of 20,000 population the following table is the result:

TOTAL DEATHS OF X.

Causes of Death.	Occurring.	Would Occur With Average Death.	Excessive.
All causes	508	300	—208
White Population	326	208	—118
Colored Population	280	112	—168
Tuberculosis	54	33	—21
Typhoid Fever	11	5	—6
Diarrhœa under two years	43	19	—24
Whooping Cough	10	2	—8
Measles	5	2	—3
Diphtheria	4	4	0
Scarlet Fever	0	2	+2

Reports adverse to the sanitary good name of a city are not very readily assimilated by the citizenship concerned. Objections to the

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Note.—Since 1909 the State has had a vital statistics law requiring the registration of deaths in all municipalities with a population of one thousand or over. The law does not require the registration of deaths occurring elsewhere in the State.

accuracy of such reports and excuses for the facts, when it is found impossible to alter the figures, are advanced. One excuse, that any one who shows high death rates for a town or county may always look for, is that, granted many people have died, they died as a result of old age. This is jumping out of the frying pan into the fire, for it is no good advertisement of a place or community to say that an unusually large part of its population is superannuated. When the attention of the citizens of the above city, X, was called to their unusually high death rates, a newspaper published in that city called attention to the fact that there were many large schools in X, and many people beyond middle life became residents of X in order to enjoy the latter years of life and educate their children. This makes it necessary in most cases to supplement the above tables with figures showing the ages of the decedents.

The following table was prepared to show the age distribution of deaths in X:

AGES OF DECEDENTS OF X.

Age Periods.	Percentages for X.	Percentages for U. S.
Under 15 (children)	30.5	30.5
Between 15 and 60 (wage earners)	32.	28.
Above 50	37.2	41.4
Over 60	23.4	31.3

This table shows conclusively that fewer people of X live to reach 50 and 60 years of age than in the average city of the United States, and that X loses 32 wage earners where the average city loses 28. Of course, it could also be pointed out that the factor of old age would not account for the loss of 43 babies where only 19 should have been lost.

It would be supererogation with such facts as those above presented, to argue with any one that the city to which these figures apply is unsanitary. There is one thing about the first two tables that the writer would like to call attention to, namely, that the unsanitary condition is of a general nature, involving both races alike, and that all classes of the preventable diseases are increased in about the same proportions. This indicates that the sanitary government of the sick city is not deficient in some *one phase* of sanitary administration but in *every* phase of its work. If the city government looked after all sanitary matters except sewage, then only the typhoid, and, possibly, the infant death rates would be excessive, the others about the average. But in this city, X, all the preventable diseases are increased in about equal proportions, which indicates unpardonable laxity in the city government along all sanitary lines of work.

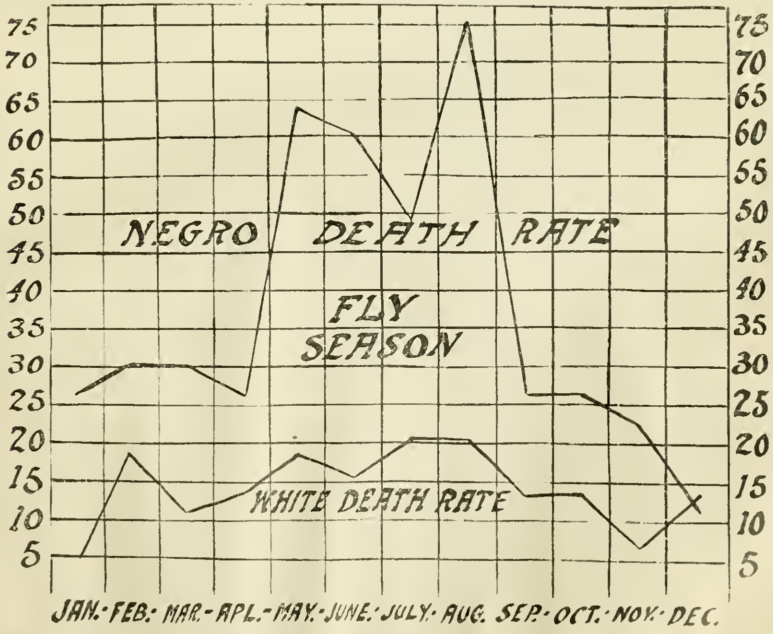
To still further elucidate the application of the health standard in determining, not only the sanitary condition of any particular social organism, but the nature of the trouble, we desire to introduce two charts illustrating vital conditions in another city of this State. This particular city has a population of 7,000 and the figures here given are the actual figures of their own official for 1911:

DEATH RATES OF Y.

Death Rate.	In Y.	Average City of U. S.	Debits and Credits.
General	22.8	16	—5.8
White.	16	16	.0
Colored	37	26.2	—11.8
Tuberculosis	329	160.3	—168.7
Typhoid Fever	211	23.5	—187.5
Diarrhœa (under 2 years)	282	100.8	—181.2
Whooping Cough	82	11.4	—70.6
Measles	35	12.3	—22.7
Scarlet Fever	11.7	11.6	—.1
Diphtheria	47	21.4	—25.6

The facts set forth in the above chart become very interesting when arranged to show the comparative death rates of the two races for the different months of the years as in the following chart:

DEATH RATES OF Y BY RACES AND MONTHS*



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*Number of deaths each month per 1,000 of the respective populations.

Now this interpretation of the two charts, as well as anything could, demonstrates the necessity of vital statistics in health work, namely, that such statistics are the symptoms of disease in the social organism. In Y, as shown on the first of the last two charts, the white race is healthy as indicated by an average death rate; the colored race is unhealthy, and the excess general death rate falls entirely upon the negroes. The second chart shows that the high death rate among the negroes occurred in May, June, July, and August, or the fly months, and the first chart shows that the highest excesses in disease death rates were due to the two diseases that flies are more concerned with than any other disease, namely, typhoid fever and diarrhœal diseases of infants. The excess deaths, therefore, occurred among those living in unsewered districts, where there is an abundance of open closets, occurred at the time of the year when the means for conveying the poisonous contents of the closets into dining rooms and kitchens, flies, were present, and were caused principally by diseases due to the consumption of excrement, An easier diagnosis of the cause of municipal disease can not be found. Of course, the treatment here would be either an extension of the sewer, or an ordinance requiring the use of sanitary closets.

Now having studied the health of communities by the vital statistics method, by comparing their vital phenomena with those of the average community, let us examine a few opinions on the health of several cities by intelligent citizens of those cities, whose opinions were *not* based upon the vital statistics of their respective cities. These true cases will, better than anything else, demonstrate the utter worthlessness of opinions without a foundation of vital statistics on the sanitary conditions of a city.

The first example to illustrate the worthlessness of opinions as to the health of a town without a knowledge of vital statistics occurred in the town whose health conditions are shown in the two charts marked X. The writer selected five of the best known and most intelligent citizens of X; called them over the telephone and stated that he wished to ask them two questions, and that he would appreciate their answering the questions and allowing him to explain later. Of course they were all consulted independently of one another. The first question asked was: "What is your idea of the condition of your city's health?" Without a moment's hesitation all five replied that it was good. The second question was: "How many deaths would you say occurred in the city last year?" There was hesitation, for all of the intelligent gentlemen questioned realized at once that they should have been able to answer the second question satisfactorily to themselves before answering the first; then the answers came as follows: From a college president, sixty; a well known banker, sixty; a leading merchant, sixty; a state official, one hundred, and a practicing physician, three hundred. The banker, college president, and the merchant evidently guessed five deaths a month, and multiplied that figure by twelve. As a matter of fact there were five hundred and eight deaths in that city that year, but seventy-two less than the sum of the guesses. These five intelligent and public-spirited citizens represent the attitude of the average citizen in matters touching the question of municipal health; they all have opinions resting on mere presumption, unsupported by facts.

Another example: In the summer of 1910 the writer was invited by a Board of County Commissioners and Board of Aldermen to visit their county town and inspect a small collection of water on the outskirts of the town that was supposed to be responsible for a large amount of their sickness. After looking over the pond in the morning and making a general sanitary survey of the town, walked over to the Local Registrar's office to see how many people were dying and what they were dying from. At five o'clock the writer consulted the Board of Aldermen, several physicians, and health officers and others. Their attention was called to the fact that the small collection of water was but one very small item for consideration in their health situation; that malaria had caused very few deaths in their town, and it was doubtful if the pond had much to do with their malaria, as there were so many other breeding places for mosquitoes; that, with a little ditching and kerosene oil (he went into details), the pond could be dismissed as a health menace; that whereas the pond was of little consequence, other conditions of health in their city were of grave consequence; that, taking statistics from their own official, they had a death rate of 27.5 per thousand, which meant 12.5 people out of every thousand of their population died in *excess* of the average death rate that obtained throughout the United States; that for four thousand population this meant an annual unnecessary loss of fifty lives to their town; that even if they had a death rate of fifteen, some of the fifteen would be from preventable diseases, and, therefore, the fifty lives lost must necessarily be regarded as *excessive* preventable deaths; that their records showed a death rate from tuberculosis of three hundred and seventeen per one hundred thousand instead of the average of one hundred and sixty-seven; that their records showed a death rate from typhoid of seven and one-half times the average; that during the last winter their town had had its share of deaths from measles for sixty years; that this last fact meant one of two things: either an extremely malignant epidemic or more probably inefficient quarantine; that they were most inconsistent in having required a railroad that passed through the town to build an overhead bridge at a cost of $18,000 because during ten years the railroad had killed at a crossing as many as ten people; that the interest on the original investment of the railroad, and the wear and tear of the bridge would amount to at least $1,500 per year, which they were forcing the railroad to spend to prevent one needless death; that while they were requiring the railroad to spend this amount to prevent *one* death, they, the aldermen, were spending only $150 to prevent *fifty* deaths.

Another concrete example of the value of vital statistics: The writer was invited some time ago to visit one of the principal cities of North Carolina to discuss, at a mass meeting of citizens, their health conditions. While driving over the town preliminary to the meeting he met one of their most influential men who inquired of the writer why he should come to his town to discuss health conditions when their municipal health was remarkably good. This gentleman was asked how much he knew about the health of the town. He replied that he had spent most of his life there, and that he was thoroughly familiar with the city, and he supposed he knew a great deal more about it than the writer. With a significant smile he asked what the writer knew about the health of ——. The writer told him that it would not take more than two minutes to prove to him that he knew a good deal more about the health of——than he did. To start with, he was asked if he knew how many people per thousand died each year in the United States. He did not. The smile began to disappear. The writer told him the average annual death rate was fifteen per thousand. Then he was asked if he knew the death rate per thousand of ————. The smile was gone. He did not. He was informed that it was 29.5 and that it was the largest death rate in North Carolina, and that, moreover, the figures that the writer was giving him he could get for himself from his town clerk; that they were *his own* figures. The writer further gave him the death rates from most of the preventable diseases from his town and told him the average death rates for those diseases throughout the United States. He was impressed with the fact that the excessive preventable death rate of 14.5 per thousand for his city's population of six thousand meant a needless sacrifice each year of 100 lives. It was also pointed out to that gentleman that the colored population of that town had a death rate of 52.2, which would be a disgrace in the Philippines, much less in a civilized community. The self-satisfied citizen soon became an attentive listener, and today he knows that his town must at an early date pay proper attention to its public health. That night the writer gave his audience the same facts, and is satisfied that within a short time vital statistics will replace self-satisfied presumption about health conditions and bring about sanitary reform in that town that so much needs it.

We have now reviewed in detail a sufficient number of concrete cases to demonstrate

THE VALUE OF VITAL STATISTICS

Value to the Public's Doctor, the Health Officer

Vital statistics have precisely the same value for the health officer that symptoms of disease have for the physician. The health officer can not recognize either the presence or nature of disease in the various towns, counties, and states, the social organisms, without such statistics, any more than the physician can recognize the presence and nature of a disease in individuals without symptoms.

When a physician can not obtain sufficient symptoms to make a diagnosis of his patient's ailment he gives a general tonic treatment, hoping to build up the general vitality of the patient, and trusts nature to do the rest. If he only knew exactly what the trouble was then he could apply local and specific remedies and hasten recovery or perhaps prevent death. When the health officer can not obtain the symptoms of his patient, the body politic, when he can not get vital statistics, he must simply give his people the general tonic treatment of sanitary education. If he only knew where, in which counties, towns, or sections of his jurisdiction, in what part of his patient's anatomy, disease was most prevalent, if he only knew where tuberculosis was reaping its greatest harvest, where typhoid fever was doing its hidden murder, where summer complaint like blood-thirsty Herod of old, was slaying the children "from two years old and under," then he might prescribe specific remedies, and apply those remedies right at the heart of the disease, where its action would be both speedy and sure.

Value to the Patient, the People

Your money is being spent by your State and by your town and county for health work. What are you getting in return? As an individual of good business sense, and more especially as a man interested in the welfare of his fellow-citizens, his county, and his State, it is your duty to see that the public money which you help contribute is wisely used.

In the October BULLETIN we will point out where the State Board of Health is saving to the State a great deal more than it is costing North Carolina. But, our conception of the great work, the real work of this Board, restrains us from seeking the endorsement, support, and coöperation of our employer, the people, on the ground that this Board is saving to the people of this State in *dollars and cents* from three to four times what it cost them, for unless this money saved, together with the other still more important work of this Board, is reducing the death rates of North Carolina, *saving human lives* that dollars and cents can not value, then a change should be made in the sanitary administration of our State government.

Here is the creed, the profession of faith, of the present health administration of our State: Real public health work can be recognized only by its effect in reducing a high death rate, a death rate over 16 per thousand, or in maintaining a low death rate, a death rate under 15 per thousand. Health work that does not have the above effect on death rates is of questionable value. A health officer is one who reduces high death rates or maintains low death rates. It is not the course that one pursues, the road one travels, to a department of health, nor which of the various methods used in sanitary work he adopts that makes a real health officer; a health officer in deed as well as in name, has but just *one* quality, to wit, ability to favorably influence death rates. Public health work either favorably influences death rates or all this talk and agitation about public health is an empty dream. We *believe* in the glorious unlimited, and undreamed of possibilities of public health work, and are willing that our faith shall be tested by our works.

Then, people of this good State, ask the General Assembly of 1913 to give us a State vital statistics law that will register all deaths occurring in this State, so that by the changes in the death rate per 1,000 of the population year by year you can see what the State Board of Health is really accomplishing. If it is without influence on the death rates of the State it is inefficient and changes are necessary.

County Commissioners, County Boards of Health, City Fathers, what are you hiring health officers to do? To make health speeches, write health articles for newspapers, visit the county homes and jails? These are merely the means to an end. It should make no difference to you about methods; what you want are results—a reduction of your death rate. Keep your eyes on the end; forget the methods; that is the health officer's business; it is yours to see that he reduces the death rate. Health work either favorably influences death rates or is worse than worthless. You must have either a state or a county law requiring the registration of deaths with race, sex, age, social conditions, and the cause of death of each decedent to see what you are getting for the money spent in your county on public health work. We appeal for your support with the General Assembly of 1913 for State registration of births and deaths.

Value in Making Public Health Work Efficient and Automatic

Should the General Assembly give the State a registration law with the necessary machinery for enforcing it, the State Board of Health would stand committed to a policy of reducing death rates or acknowledging its failure to do effective health work.

Now the State Board of Health could only bring about a reduction in the general death rate by seeing that each county did its health work effectively. The more efficient each county health officer the better would be the showing for the State Board of Health. On the other hand the more inefficient the work of the county health officer, the poorer would be the showing for the State Board of Health. The State Board of Health would be, then, in a very real sense, dependent upon and concerned in the health work of each county, and would naturally use every available means in its power to make more efficient the county health work.

But what power has the State Board of Health, in fact what right has the State Board of Health, to meddle with county affairs? This right: The law constituting the State Board of Health *commands* that body to educate the general public in all matters affecting the public health. We take it that if a county had a high death rate which had existed for several years it would be one of the duties of this Board to let the people of that county know a fact of such vital importance. This power: The power of public opinion generated through popular education carried on through bulletins, newspapers, and public addresses. For example: Suppose at the end of each year the death rates of the one hundred counties of this State were published; that the county with the highest death rate was pointed out; that the county with the lowest death rate was pointed out; that the photograph of the health officer who had produced the greatest reduction of death rates during the past year was shown in THE BULLETIN with a brief history of his work; that the one hundred county health officers were shown, cartoon form, with the man with most credit as a death rate reducer biggest and at one end of the column, the man with the next credit a little smaller, and smaller, and smaller, in accordance with the amount of death rate reductions down to the smallest man of the hundred at the little end of the line. Can any one imagine that the power of such facts as these, the power of almighty truth, would not awaken a health officer with any pride and produce a life-saving contest between the one hundred county health officers of North Carolina that would reduce to a very marked extent the death rate of the State?

Who will object to this campaign of wide publicity and genuine merit? The efficient health officer? No indeed. It means to him more than his salary; it means the pleasure of the consciousness of real and great accomplishment; it means a wide demand for his services and fair compensation—in short it means giving him the credit that he deserves. But the inefficient man will probably object. Object to what? A publication of the facts? He can not. He ought to be eliminated from the health service, and when health work is placed on a vital statistics basis his tribe will become extinct.

Value as a Permanent and Complete Family Record

The Virginia Health Bulletin impressively and truly says:

> "Jealous of his life, man is careless of his history. Countless generations have lived and wrought and died and have left behind them no conscious memorial of their existence. Empires have risen, have extended their sway and have left no record of their achievements. Great dynasties have ruled over wide dominions and have fallen without transmitting to posterity a single chronicle to their deeds. Even where future generations have been able to reconstruct the history of the past, it has been through the unconscious memorials rather than through records that man intended for posterity. The memorandum of business transactions which Babylonian merchants made to refresh their memory have yielded more light on the history of that empire than have the chronicles of kings; the potteries of Crete tell the story of Minoan civilization where no legible record has ever been deciphered. To complete the story of a single conquest recorded on an Egyptian obelisk, historians have been compelled to delve in graves and to unravel the meaning of unconscious records of that day.
>
> "The age of neglect is past, and present-day civilization can not fail to leave behind it for the information of remotest posterity a connected, conscious story of its life. But what men have done for the race, they have not done for the individuals. They record the acts of government and preserve the records of state, but they take very little thought of the individual. Millions of men die every year, even in civilized countries, and are remembered only in the minds of their friends. Within a few years, all accurate record of their life has vanished; none knows when they were born or of what they died, or how old they were when they passed beyond. Indeed, unless a man attain to fame, or commit some crime, or serve a term in prison, or enlist in the army or navy of his country, no permanent record of his existence survives in many states, except by accident."

Reader, did you ever have a desire to know those of whose life you are a part, your grandparents, great grandparents, and their families? Have you ever wondered when and where and of whom some of them were born? Have you ever wished to know how old some of them were at death, and where and of what they died? Have you desired this knowledge and been unable to obtain it? Then you know its value. And shall it be with your children as with you, when they shall look backward across a century or centuries, and want to know these facts about you, their grandparent or great grandparent? Are you willing to leave the keeping of this vital record of the great events of your life, the circumstances of your birth and death, to some elderly member of your family? How difficult for such an individual to obtain these simple facts from a family dispersed in time and space. How incomplete even the best of such family records.

Let us leave the names of our parents, the time and place of our birth, our age at death, the place and cause of death, the chief events of life, its beginning and its end, as a complete record, an official record, made so with the seal of the State, a permanent record through the centuries to all posterity. This is a custom of civilization. It is practiced by sixty per cent of the people of the United States. All the New England and Eastern States, and many of the Western States, register the births and deaths of their people. Only three of the Southern States are registration States, and they have become so only within the last two years.

North Carolina must be a registration State. She must keep abreast of Southern States at least, even if she has allowed certain Western

States that have only recently been admitted to the Union, of which our State was a charter member, to go ahead of her in this respect. Her stockmen registered their thoroughbred horses, calves and pigs; her citizens, justly proud of their pure Anglo-Saxon blooded children should see that their births and deaths are officially recorded. We do not believe our State is so busy with her material resources that she can not take official cognizance of the coming and going of her children.

Out in Kentucky they are accustomed to speak of the State Registration Office, where all deaths and births in the State are officially and permanently recorded, as Kentucky's Big Family Bible. A happy conception! Don't you wish that North Carolina had a great big family Bible like Kentucky's, where as one big family, a great commonwealth of brethren, our births and deaths would all be recorded together? Then ask your representative in the General Assembly of 1913 to get us one.

RACE PRESERVATION*

By Rev. George W. Lay, St. Mary's School, Raleigh.

In speaking before a body of really scientific men, one like myself, who can not claim to be a scientist, is somewhat at a disadvantage, as he must choose some subject on which he is qualified to speak.

Believing as I do that all things in nature and above nature are determined by the One Great Creator, I believe not only in the unity of nature but in the unity of all things. Much harm has come in the past from making too clear a division between the different departments of human knowledge, and from the fact that earnest students of the different phases of truth have often been too blind to the importance of other kinds of truth and to the interdependence of the different branches of human knowledge.

I am not going to preach you a sermon, but wish to present a few ideas, not at all original, on Eugenics, the most important of the new sciences, and some points connected therewith.

One of your number has called my attention to the fact that some studies in light and sound, formerly coming under the charge of physicists, have now been turned over to the charge of psychologists. We see here that natural science has resigned part of its former work to the domain of mental philosopsy. I believe that more and more the scientist must coöperate with the student of mental and moral truth, and on the other hand the theologian must consult more and more the facts of natural science, and that moralist and scientist alike will learn to sympathize with the work of the other, and to coöperate, with the feeling that neither can be successful in his chosen field of special study without the help of the other.

In the beginning we find, both by revelation and the study of nature, two great movements in the world of life, *i. e.*, preservation of the individual and preservation of the race. We will confine ourselves to the animal kingdom. To insure these two ends we find two sets of appetites or passions, which man shares with the lower animals. The appetite for food and drink ensures the continuance of the individual life; the other set of appetites ensures the continuance of the race. The former causes the struggle for existence; the latter causes the struggle for persistence. The doctrine of evolution traces the workings of these two great natural forces in the preservation of individuals and of species. While nature might evolve downward, it is usually taken for granted that its evolution is upward, and on the whole among the lower animals this is so. The species becomes more fit for its immediate environment. We shall see later that in the case of man mental and spiritual elements enter in, causing an actual environment and purpose of existence much larger in its scope than would usually be connoted by environment in its purely scientific sense. Hence it is that these natural forces would not alone necessarily produce the best mental and moral results in man, and man himself by bringing in his mental and moral powers must control, and control rightly, these purely natural forces. I hope to show that until recently this has been done in an entirely one-sided way.

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*Read before the North Carolina Academy of Science at its annual meeting, 1912, at Chapel Hill.

If we look upon the natural world and the working of the two laws that ensure, respectively, the continuance of the individual life and the continuance of the race, we discover that in a pure state of nature, without the interference of man, the result is on the whole for race-improvement. In securing this end, we discover at once that nature is prodigal with the individual life, in order to ensure the preservation and improvement of the race. Millions of eggs and young are destroyed, in order that a few may survive to maturity. The sick and the weak succumb at once to their inefficiency or are devoured by the stronger, even of their own race. The more fit assume no burden in the support of the less fit. A slight fall below the average of individual efficiency results at once in the elimination of the undesirable individual. The theoretical increase in geometrical ratio, that would make it possible, if all survived, to fill the oceans and cover the dry land in a short time with any one single species, shows the tremendous power of the death-dealing hand of nature, that destroys most of her offspring and deprives them of life as ruthlessly as she has bestowed it lavishly.

Thus does nature make possible preservation and improvement of the race for which, and for which alone, she works constantly. The strong only are left to propagate their kind. The stronger among the strong are likely to propagate more of their kind than can the weak. Thus in the evolution of the race the fittest survive and the result of evolution is to produce a species better fitted to the immediate environment than was the race that came before.

Still confining ourselves to the animals below man, let us now ascend one step and take the kingdom of the lower animals, still subject to these two great forces of nature, but subjected to them under the controlling influence of intelligent man. The human intellect is a part of the divine creation. To man was given control over every living creature, the cattle, the fowls of the air, and the creeping things. Man was to be himself subject to the laws of nature, but his intellect gave him power to learn what these laws were, to direct them in new ways according to his will, and to control them in accordance with his choice. Thus we find man by using the forces of nature and duplicating the slow processes of nature, producing varieties of living creatures, according to a definite pre-conceived plan, and in a period marvellously shorter than nature alone could attain. The forces and methods are the same, but forethought governs the result, and little time is needed for the evolution, because a new element has been introduced, that is, the power and force of man's intellect.

In the breeding of animals man follows very closely the methods of nature, but is able to employ her forces with more efficiency and celerity. He too is prodigal with the individual life. The sick are slain to protect the others from disease; the weaker and defective are killed and used for food; and the more efficient individuals are allowed to survive. He has always, to a certain extent, also moulded to his will the natural forces intended to ensure race-preservation, and in the more modern plans for animal-breeding, the methods thus made possible are consistently and perseveringly used. All of man's intellectual power is used in selecting only the best to be the progenitors of the future race. The result has given us not only a race that is more efficient than the former race was in the same way, but also many new varieties specially adapted for specific purposes to which even the best of their progenitors were less fitted.

We have taken our children as they came, as the gifts of God, with whose plans it were impious to interfere. But let us observe that in the breeding of the lower animals man has not considered it impious to control the forces of nature by his intelligence. He has not believed that the animals he found came from God by divine decree according to methods with which he must not interfere. He has accepted his part in the divine plan, has felt that his intelligence was a part of it, and that in changing the breeds of animals for the better by the use of those eternal truths which he had discovered, he was carrying out the divine will and coöperating in the eternal plan to make the world better because he had lived in it. In other words, to nature he has added art, and has believed that, in the practice of his art, and in the securing of the artificial, he was carrying nature itself to its highest evolution and its best achievement.

One animal alone is left, and that is man himself. In this case man has tried to control the forces of nature and to conquer, if possible, the evils that they brought. When he attempted to do this, he interfered with a mechanism which was delicately adjusted, and in which a change in one feature of the plan for a good end has shown that another change was involved somewhere else which prevented, in whole or in part, a satisfactory result. He has confined himself almost entirely to the operations of the forces that control the individual life and until very recently has completely ignored those other forces, supremely powerful in nature, which control the life of the race. As man adds reason to the brute forces of nature in his treatment of the lower animal kingdom, so also does he add a moral and religious factor, when he undertakes to direct the forces of nature as they work on the human race.

In a state of nature man was like any other animal. Disease and inefficiency destroyed the unfit individual, and the stronger and more efficient male secured the more desirable mate or mates. Coming upward from the brute to the lowest races of men, we find the sick and weak deserted or put to death and that the less desirable captives became an economic asset as an article of food, while social customs made it likely that the stronger would have a larger share in determining the efficiency of posterity. As we go higher still we find that human life is universally recognized as sacred by those of every moral and religious persuasion, while the kindlier virtues that culminate in Christian charity prevent man from viewing with scientific indifference the sufferings of the sick, hungry, and defective. The addition of these moral and religious considerations has added a tremendous economic burden on the race, and has preserved alive a multitude of the inefficient to propagate their kind. It is obvious that these moral and religious ideas are necessary and are essential to all that is noblest in our nature. We must not complain because our higher powers bring higher responsibilities, but we must see to it that we are using all our powers and all our knowledge to secure all the best results that are contemplated in the whole plan of creation.

It is distressing to find that, as we conquer disease, we preserve the unfit who would otherwise be cut down, and that, in saving infant lives we allow many inefficient ones to grow to maturity, progagate their kind, and become a burden on society. Improved sanitation, laws against child-labor and the employment of women, and all our best discoveries in medicine constitute a two-edged sword.

We have directed all our efforts towards the individual and ignored the problems of race-preservation; have worked for the present and forgotten our responsibility for the future; have nobly tried to realize that we are the keepers of our brethren, but have neglected to remembr that we are the keepers of our children and of our children's children, and that the sin of our neglect will be visited on the third and fourth generation.

The students both of natural science and of religion must awaken to the responsibility for the future entailed by our higher civilization. Each must teach the truth to the other and offer his help; and each must accept this truth, and receive this help in a broad spirit of mutual toleration and sympathy. We must carry our efforts further back. For some time we have worked to preserve the children. Only in 1895 was the effort made to guard pre-natal life. In Belgium in 1900 and in England in 1907 we have the first school for mothers. It is evident that we must direct our efforts further back towards the parents of future generations, so that children shall not be born condemned, long before their birth, to disease, feeble-mindedness, and physical inefficiency. We must have less pride of ancestry and more pride of posterity. We must all face the problem and see that it is not only necessary but right that man as an intelligent and religious being should strive to secure the best development of the race by acting both intelligently and in the fear of God.

As to the methods to be used, no one now can see clearly, but this much is sure, that the moralist must make use of scientific knowledge and apply his religious principles to the needs of the present day, while the scientist must see that the solution of the problem lies largely in the domain of morals and religion and must be reached by developing the highest principles of our spiritual nature, and by developing man's will-power and self-control, rather than by the enactment of laws and the mechanical enforcement of purely scientific ideas. Sanitation alone seems to conquer nature's purpose by preserving the unfit. Child-labor laws seem to reduce the birth rate, which at first sight might seem to mean a better grade of children, but on the other hand it seems to be true that the first children are more likely to be below the average, and that only after three or four children are born does the average tend to improve. The science is a new one. I only plead for coöperation, open-mindedness and education. We none of us know much about eugenics. The vast majority of people are also absolutely ignorant of the simplest facts bearing upon the matter and are too prejudiced to give even a hearing to those who would have us take up the problem intelligently and reverently.

Those diseases which are most loathsome in the individual and most deadly to the race, either by preventing its continuance or by giving it a fatal inheritance, can in the end be finally eradicated only by the enforcement of the moral law. Preacher and educator must unite in an intelligent warfare of education against these diseases, instead of ignoring them as belonging to science alone.

War and its horrors must cease, not simply on moral grounds, but on scientific grounds that deny the wisdom or the righteousness of believing those not fit for soldiers are therefore fit to be the fathers of the next generation.

Each of us much comprehend *all* truth, see the importance of all forces, physical, mental, and spiritual, and ennoble our lower powers, which we share with the brute creation, and direct them to the highest ends, while we covet earnestly the best gifts and proudly cultivate those highest powers, which man alone possesses, and by which he, as Lord of Creation, is king over all nature and makes the whole world better, purer, and nobler.

INSECT-POWER OVER HUMAN ILLS

By Edward B. Beasley, A.B., M.D., Dr.P.H., Baltimore, Md.

In this remarkable mechanical age, the vast work accomplished by the great force and almost human intelligence of modern machinery is constantly observed everywhere in the civilized world. The wonderful advance which has been made by inventions within the last century seems to foretell of the gradual elimination from the world's work of our most faithful "beast of burden," the horse. Although we are doubtless approaching a horseless age, we are depending more and more upon "horse-power." In the air, on the land and sea and in the submarine depths it is the "horse-power" in back of the throbbing machinery which has made man master.

It is little wonder, then, that we are paying scant attention to any power which can not be converted readily into "horse-power," since "horse-power" is the "moving spirit" of the world. Comparatively recent studies have convinced the medical profession and those well informed amongst the laity that insect-power can disable, cripple, or even destroy the human "governor," although it can not compete with "horse-power" in the mere running of machines.

It was not a human ill which led to the stupendous discovery that insects could spread disease, but a bovine sickness, Texas Fever, which is confined principally to our southeastern States. If these poor, infected cattle had not been so fortunate as to cause the United States an annual loss of $60,000,000, the rôle played by insects in many of our communicable diseases might still be undreamt of. However, since animal life—when not of the human brand—is so valuable commercially, the government literally spread itself financially in order to probe to the very foundation of this devastating disease. About 1886, after a most painstaking investigation, it was learned that Texas Fever was caused by the presence, in the blood of the affected cattle, of a small protozoan parasite and a few years later it was proved that this parasite was taken from one animal to another by a tick. This tick was promptly dubbed the "Texas fever tick," but entomologists descended on it with a more formidable name, *"Margaropus annulatus."* As a general thing it pays to stick to an insect's common name, as entomologists are altogether to prone to change again and again the technical one of any insect which attains sufficient prominence by flying into the public "lime-lights." This sad fate has befallen several of our most "sociable" insects.

For twenty years or more there has existed in the Bitter Root Valley of Montana a disease of man called "Spotted Fever of the Rocky Mountains." (It was necessary to use this long designation in order to avoid confusion with certain other diseases.) More recently cases of this fever have been reported in sections if Idaho, Nevada, Oregon, and Wyoming. Since on the average of 70 out of every 100 people suffering with the disease die, and since the fever fails to recognize any sex, age or social lines, the inhabitants of the afflicted regions were glad to find out that a tick was the disseminator of this terrible illness. The cause of the disease, which is transmitted by the bite of the infected tick, has not yet been found. The tick, so far, has apparently escaped a common name, but in running through the hands of the entomologists it has not been so fortunate and is at present encumbered with *"Dermacentor marginatus."* The extermination of this tick would eradicate completely "Spotted Fever of the Rocky Mountains" and would increase markedly the census returns from this montainous country.

In "Darkest Africa," the land of so many pests, there is a common tick (*Ornithodros moubata*) which is capable of spreading "African tick fever." This disease has killed many Europeans while visiting that portion of Africa where the fever is prevalent. Countless natives have died from "African tick fever" and there is cause for general African alarm as the disease is slowly extending its area from Central Africa. The responsible tick bites by night and hides by day, so that its habits resemble those of one of our native insects. This African tick has a most voracious appetite and spares neither man nor beast when meal time arrives. It is one of the most dreaded pests throughout the whole of Africa.

The common wood-tick in our country has no human ill traced to him. The most he can seem to do, when given sufficient opportunity, is to render one anemic. That he may be, of course, a "fitting" occasion for an outburst of—words, goes without saying, but all hide-puncturing insects stir up this same kind of enthusiasm in the average man. Tom Sawyer and Joe Harper displayed their knowledge concerning the harmlessness of the wood-tick when, in the scene so humorously depicted by

Mark Twain, they vied with each other for the possession of a "pet" tick. Be sure of your geographical location before quarreling over the ownership of any tick!

Plague, which recently invaded China, has been one of the most feared of all diseases. London, in 1665, lost in the neighborhood of 70,000 of its inhabitants from this frightful pestilence. Plague may affect the lungs, the blood, or the glands. The recent Chinese outbreak was largely of the pneumonic (pulmonary) type and as this form of plague, in all probability, is spread in a manner similar to pulmonary tuberculosis all insects, with the exception of the house-fly, can be exempted from being carriers. However, in the blood or septicemic type and in the glandular or bubonic type, we must reckon with that active, energetic insect, the rat flea. "Hard to catch, but still harder to kill." Luckily, our flea (*i. e.,* the one which prefers man to all other foodstuffs) is not inclined to spread any particular disease, but confines his ability as a suctorial artist to the pursuit of a livelihood. Plague is primarily a disease of rats, but it visits mankind when the rat flea is forced to leave a plague-killed rat and look for its living elsewhere. If a rat happens to be near "all well and good," but failing to locate his standard diet a rat flea will proceed "to sponge" on any person in his immediate proximity. The proximity does not necessarily have to be so immediate, as a flea's jumping power is so great that if a man's size would allow him a proportionate jump, the present world's record for the broad jump would appear microscopic. The San Francisco epidemic of bubonic plague would no doubt have been nation-wide had it not been for the knowledge that the germ (*bacillus pestis*) was transmitted from rat to man and from man to man by the rat flea (*Lemopsylla cheopis*).

An insect, which is a terror to housewives, an embarrassment to guests and a source of great confusion wherever found, is the responsible bearer at times of Relapsing or Seven-day fever. The reader will no doubt recognize in the foregoing description that unwelcome bedfellow, the bed-bug. It is well to be armed with the technical name of this humble bug, *Cimex lectularis,* as a mention of his common name is considered a breach of etiquette. The cause of the fever is a microscopic, cork-screw shaped organism which is sucked from the blood of a relapsing-fever patient by the bed-bug and is transferred when the bug visits a new host. Fortunately this disease, although it persists stubbornly, does not kill more than 4 out of every 100 persons attacked, so that the average American dreads the "purveyor" more than the disease. Relapsing fever has not appeared in this country in epidemic form since 1869. Ireland, India, and some other countries have been less fortunate.

According to the general belief of the laity, doctors and nurses possess some magic protection against all "catching" diseases. The records of typhus fever show that this belief is at least subject to one exception. To cite just one instance where apparently no protection occurred, we have only to glance over the records of the Crimean War and see that 603 out of 840 nurses in the service were attacked by typhus. So far the cause of the malady is unknown, but it is undoubtedly spread by the bite of the louse (*Pediculus-capitis*). The death rate in some epidemics may reach 40 to 50 per cent. During severe outbreaks the disease spreads through hospitals in a tremendously rapid manner, so that in addition to the louse-route, it seems like it must be transmitted through the air. The gradual disappearance of typhus fever has been a source of unusual satisfaction to health authorities. New York, in 1892-'93, was the last American city to be grasped by an epidemic of this disease.

"Three-day fever," "phlebotomus fever," "Adriatic fever," or "Egyptian ophthalmia" is an illness which has been reported from the province of Herzegovina (Austria), Malta, Crete, Egypt, India, and recently from a section of Africa. In Malta and Crete the disease seems to be much milder than in Herzegovina. Deaths from "three-day fever" are rare. Persons attacked suffer with a great deal of aching, a high fever for two or three days and their eyes become very badly inflamed. At times the eye inflammation is so pronounced as to resemble our "pink eye." The cause of the disease is unknown, but the virus has for its vector a small fly or gnat (*Phlebotomus papatasii*).

Along the west coast of Africa there has been present for many years that terribly fatal malady, "Sleeping Sickness." Henry Setton Merriman't book, "With Edged Tools" gives a very vivid description of the panic this frightful disease creates amongst the natives. For insomnia it is a sure cure, but it is almost equally sure to kill. Medically the disease has been labelled *trypansomiasis*—a name derived from the small protozoan parasite which causes it. "Sleeping Sickness" in a way is a misnomer, for the attacks of sleepiness do not manifest themselves until the last stages of the disease. Many foreigners while on the west African coast have died from this disease. However, there is one prominent American who, since his return from Africa, has not yet developed any signs of the "sleeping stage" of the disease. The deaths from "Sleeping Sickness" amongst the natives can be numbered by the hundreds of thousands. Whole villages have been blotted out at a time and many other settlements deserted as the disease flew onward in its course. A biting fly called the tsetse-fly, which somewhat resembles our stable fly, transmits the trypansome from one individual to another. For sheer power as a "destroying angel" the tsetse fly has few equals.

When Kipling was so vigorously assailed for writing "The female of the species is more deadly than the male," his critics must have overlooked the mosquito when they asserted that the statement was false. The female mosquito is the only official "lancer" of her species, as the proboscis of the male is so formed that he is obliged to content himself with a vegetable diet and to leave animal skins alone. Nature should be blessed for this beneficent architectural headwork. Could the males bite—allowing that a census would show that their number equaled the females—there would be just one-half as much comfort living "over on the Jersey side" as at present.

In addition to the mosquito's unhappy ability to disturb our nocturnal slumbers, with her "unsoothing" music, she has the power to disseminate with her bite four communicable diseases. These four ills (dengue, filaria, yellow fever, and malaria) at the present time comprise the mosquito's complete repertory of human ailments and it is to be hoped that the distribution of no other disease will fall to the lot of this insect—inhabitant of every land—excepting perhaps the desert of Sahara. It is a matter of extreme good fortune that, as a rule, only a certain species of mosquitoes conveys any one particular disease, for if all varieties could act as carriers, a mosquito-borne epidemic of disease would be the signal for universal alarm.

Dengue or "break-bone" fever is a disease which is seldom fatal. It usually confines itself to tropical and semi-tropical countries. The remarkable meteor-like manner with which this fever travels, ranks it as the most rapid-transit disease known. In 1897 at Galveston, Texas, it attacked 20,000 people within the incredibly short period of two months. Dengue-stricken persons suffer excruciating agony at times. Imagine all the tortures of the Inquisition combined in one treatment and you can obtain some sort of an idea concerning the pain of bad cases of "break-bone" fever. A species of mosquitoes known as Culex fatigans is the main but not sole distributor of dengue, as some other varieties are probably involved. The fact that several kinds of mosquitoes may help to transmit dengue would aid somewhat in accounting for the celerity with which the disease spreads. The actual cause of this illness is still a mystery.

Filaria or filariasis is also a tropical or subtropical disorder. The disease is caused by the presence in the body of some adult worms—located usually in that portion of our anatomy called the lymphatic system—and in addition countless microscopic embryonic worms circulating in the blood. A most curious and interesting feature of filaria is the fact that the embryonic worms are to be found in the peripheral blood vessels almost exclusively at night. However, should an individual with the disease reverse his sleeping habits—by "turning night into day"—these small vermicular parasites give up their evening appearance for a daytime parade. Filaria, in only exceptional cases, causes any symptoms; and if an individual discovers that he has it, he does so generally by mere chance. It has been estimated that 30 to 40 per cent of the natives in the South Sea Isles have filaria, the bulk of whom are not annoyed by any symptoms whatsoever. Elephantiasis is a complication of the disease which occurs sometimes and it is a most distressing condition, since it causes a tremendous distension of the part affected and relief is given only by means of a surgical operation. A species of Culex mosquitoes is the conveyor of filaria.

The death-roll for which yellow fever stands sponsor contains hundreds of thousands of names. In our own country there have been some fearful death-dealing outbreaks of this much-dreaded disease. To give an example of the great havoc this fever can produce, it is only necessary to recall that the yellow fever epidemic of 1878 swept through 132 towns, caused 15,000 deaths and a monetary loss of $100,000,000. Isn't the spreader of such a scourge a power to be reckoned with? The French failed to put through the Panama Canal, not on account of any deficiency in mechanical engineering, but because they were unable to cope with the ravages of yellow fever, ably assisted by malaria. No amount of American engineering skill could have shoved the canal through unless it had been coupled with a scientific method for combating yellow fever and malaria. When this gigantic waterway is thrown open to the world's commerce, it will be a most impressive monument to the power of modern sanitation.

The cause of yellow fever is still sought, but beyond a question of doubt it is transferred from one person to another by one species of mosquitoes, *Stegomyia calopis*. The possession of this knowledge has proved an inestimable boon to all localities which are subject to invasion by this fever. The way in which the two last epidemics in New Orleans were handled demonstrates the enormous advantage of scientific knowledge. In 1897, when the rôle of the mosquito was unsuspected, the beautiful Crescent City on the Mississippi was at the mercy of a big epidemic, until at the approach of winter "Jack Frost" stepped in and "saved the day" by dealing death to the mosquitoes. In 1905, the inhabitants were stricken with another epidemic, but armed with the proper information soon crushed out yellow fever by destroying the mosquitoes.

It would be extremely difficult to place a value on the damage caused by malaria. In the United States alone it has been estimated that malaria is responsible for a loss of millions of dollars annually. This covers damage caused by deaths (12,000 yearly) illness and real estate depeciation—for malarial districts seldom have a building boom. An eminent authority has stated that over 2,000,000 cases of malaria occur in this country every year, the majority of which prevails in the Southern States. The disease is not often fatal, unless it is of the pernicious type, but it is one of the greatest obstacles in the road of energy and efficiency now in exisence.

Malaria is due to the presence in the blood of a protozoan parasite which lives one part of its life's cycle within the bodies of a certain genus of mosquitoes (*Anopheles*). For generations it was thought that malaria—as its name would indicate—was due to bad air. This idea still sticks like the "Rock of Ages" in the minds of many persons. Those skeptical over the mosquito's rôle—in case laboratory proofs will not convince them—need only recollect that two English physicians (in 1900) lived for a period of three months in one of the worst malarial districts in Italy without exercising any other precautions than having their shack thoroughly screened against mosquitoes and taking care to enter their abode before twilight. The windows of their shack were open day and night and while nearly every one around them succumbed to an attack of malaria, these two men escaped simply because the malarial mosquitoes could not transfer the responsible parasite to them. Night air in marshy regions was looked on, before the dawn of our knowledge concerning the habits of *Anopheles* mosquitoes, as a great factor in the production of malaria. The *Anopheles* mosquitoes do all their blood-letting during the evening hours, and it is for this reason that "night air is bad" in a mosquito locality. If a total solar eclipse can send chickens to roost it may possibly send *Anopheles* mosquitoes on a foraging expedition, but there is no evidence yet on the influence of this phenomenon over mosquito-time.

As disagreeable as a house-fly may become, in trying his various schemes for tormenting mankind, he can not bite. If the reader is firmly confident that he has been bitten by a house-fly, let him rest assured it was a pure case of mistaken identity, and the biter was only a first cousin, the stable-fly. Although the house-fly can not bite he has found a method for carrying disease. Situated on a fly's feet are some tiny little pads containing fine hairs which are covered with a sticky secretion. The presence of these pads enables a fly to defy the law of gravity when walking on ceilings and perpendicular surfaces. It is also by means of the pads that the house-fly becomes a menace to the public health. When a fly strolls in a leisurely manner through filth, dirt and decomposing matter, these pads pick up millions of bacteria, some of which are rubbed off on the next surface with which the fly comes in contact. From filth to food is an avenue then by which under certain conditions a fly can go as a distributor of typhoid fever, dysentery, cholera and possibly some other diseases. Fly-specks are also a source of danger as disease-bacteria can live for many days in the intestinal tract of flies. During the Spanish-American War more of our soldiers died on account of the typhoid fever carried them via "flydom" than were killed by Spanish bullets. Indeed so much typhoid fever has been laid to the credit of the house-fly that it has been proposed to dub him the "typhoid fly."

All of the insects so far described, with the exception of the house-fly, bring illness to man by conveying parasites of disease, while in the act of biting. Shorn of their biting power these insects could no longer torture and destroy people; and each year thousands of individuals, who now come down with an insect-borne disease, would escape "scot-free" from the sick list.

There are, however, several insects which, although they do not carry disease-germs, are capable of poisoning man either locally (at the site of the contact) or constitutionally. Three of these insects have earned a reputation for killing far beyond their real power. This "poison-squad" consists of the tarantulas, the centipedes, and the scorpions. The tarantulas and the centipedes inject their poison by biting, whereas the scorpion stings. All three live only in warm countries. Death has followed poisoning by any of these insects, but usually any deaths which are caused by the centipede or the scorpion will be restricted to children and those adults weakened by disease, great fatigue or the excessive us of alcohol. (A "thousand-legs," a harmless insect, is sometimes erroneously called a centipede.)

Related to the house-fly are a few other flies which can produce a variable amount of pain by their bites or they can inflict an immense amount of suffering by allowing their eggs to be hatched in open wounds or on the mucous membrances of the body. As biters, we have the horse-fly and the stable-fly. Those who have experienced the keen penetrating power of these two energetic blood-letters would prefer the stable-fly's more kindly thrust. Screw-worm flies (gray flies), blow-flies, blue-bottle flies, and flesh-flies, at times, deposit their eggs in open wounds and occasionally in the noses or in the ears of persons sleeping out of doors during the day. Within a short period the larvæ (maggots) hatch out and by their intensely aggravating presence the infested locality is soon in a fearful turmoil. This terrible condition is especially apt to happen with the larvæ of the screw-worm fly, as these active, wriggling creatures are inclined to squirm through tissue, devouring mucous membranes, muscles, and sometimes eroding their way down to the bone. Unless the progress of these larvæ is stopped within a certain time the unfortunate individual undergoes intense suffering, to be relieved only by death.

Those anglers who have had a few "days off" and during June or July have tramped into the woods to test their "fisherman's luck," no doubt have had some bitter experiences with the persistent black-fly or buffalo gnat. Netting worn as a preventive measure against this pesky insect's attack seems to be of little avail as the black-fly appears to be able to insinuate himself between the finest meshes made. Although not carrying a disease the black-fly's bites can at times produce a clever imitation of hives. Death once in a while follows from these bites. "Punkies" or "no-see-ums" and sand-flies also contribute to the misery of the human race.

Amongst the tenement house districts and slums of many cities is found the "happy hunting ground" of the "itch-mite" (*Sarcoptes scabiei*). Luckily these mites have no wings and any efforts to soar to a high social plane must occur through the public schools or in other public places where all are "free and equal." The raids, made formerly by these insects in public schools, were very extensive, but now, owing to the rapid recognition of the early cases, "scabies" (*i. e.,* the disorder produced by the itch-mite) seldom causes much "slaughter of the innocents." These disgusting insects—disgusting because their presence nearly always means a lack of cleanliness—live in burrows just beneath the outer layer of the skin where they create an intense itching. When mentioning the bed-bug, the louse or the "itch-mite," it is wise to use their technical names, as calling "a spade a spade" with any one of the three is apt to produce a certain amount of shock to an audience.

From the day a child is able to go "black-berrying," he is likely on such crusades to return home with an accumulation of "jiggers" or "harvest-mites," even if he lacks berries. Lurking amongst bushes, shrubs and herbage "jiggers" soon find a victim in the passerby, whether man or beast. Now "jiggers" are intended to limit their meals to the plant kingdom, but some unknown influence has given them a most sanguinary appetite. Unlike the female "Chigoe" of Porto Rico and Cuba, which penetrates our skins to lay her eggs (thereby causing a tremendous cutaneous irritation associated with ample pain) "jiggers" pierce our epithelium merely to satisfy their blood-thirsty desire, and if not killed by the tormented individual, they soon(?) die victims of their sanguinary greed.

Living in the tropics there is an ant (*Virigagua*) which far surpasses our red ant in the fierceness of its bites. Those who have had any cutaneous contact with this tropical ant say that the bitten locality feels like it had been attacked with a pair of red-hot pincers. The West Indies are noted as the habitat of a small insect designated by the natives as *Diablito Colorado* (little red devil). From all accounts he ranks second to his notorious namesake as a tormentor of mankind. The insect abounds during the rainy season and its body is so tiny as to be scarcely visible with the naked eye. Its bite is as large as it is small and gives rise to an intolerable itching which, if mollified by scratching, is almost sure to leave an abraded surface which heals with great difficulty. The itching from the bites is so intense that "by day it drives the perspiration from every pore and at night makes one's hammock resemble the gridiron on which St. Lawrence was roasted." Let us hope the "little red devil" will continue to reside in the West Indies.

About a score of years ago there was imported accidentally from Holland or France by a florist in Sommerville, Mass., a moth which has since spread through several of the New England States. The moth has become generally known as the brown-tail moth on account of a tuft of short, brown hairs located at its tail. The moth itself does not harm people, but when passing through the caterpillar stage it can produce a very disagreeable rash on the exposed surfaces of one's body. This rash is caused by the filling of some of the pores of the skin by the small barbed hairs from the caterpillar. In this situation they produce, in sensitive skins an intense mechanical irritation, accompanied by a rash. The hairs are not poisonous. Actual contact with the caterpillar is not necessary in order to become a "victim," as it is believed that during the last of June and the first of July the hairs are apt to be floating in the air wherever brown-tail moth caterpillars are present in numbers. There have been no deaths reported from this trouble.

The earliest juvenile impressions of insect-power are focussed sharply on those which have a sting. This usually means that the first insect to command respect for "things with wings" was a bee, a wasp, or a hornet. The bee has the most pleasant contact, while the greeting from the hornet is the least to be desired. There is a slight consolation in knowing that the sting of a bee is so shaped that it is left with the "stung." Consequently, once stung by a bee "never again" by that same one. Wasps and hornets on the other hand can give a "Gatling gun" performance of stinging. Wasps and bees may be handled with impunity and no amount of coaxing will make them sting if you take care to handle the drones only. However, "a little knowledge is a dangerous thing," and it is best when in doubt to grab all wasps and bees by the "north end" in preference to the "south end," in order to avoid painful results. Stings from these insects seldom cause death, but any one who thoughtlessly sits on a hornet's nest is likely to take a "rest cure" for at least a week, unless he possesses the speed of Mercury.

Within a quarter of a century we have discovered that insect-power is a tremendous factor in human suffering. We are now aware that several insects are guilty of wholesale manslaughter by destroying with the diseases they can carry the inhabitants of cities, towns, villages, and of the country. Other insects "commit assault and battery" on mankind whenever they feel so disposed. Some others are at present on the "suspect-list," and in a few years will no doubt be indicted, tried and found guilty of homicide. With a death-roll from insect-borne diseases which extends into the millions, and with a list of untold suffering, it is high time that insect-power over human ills is receiving careful consideration from the public.

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LIST OF FREE PUBLICATIONS.

Besides the monthly HEALTH BULLETIN, the State Board of Health issues free special bulletins on the following subjects:

No. 1. *Tuberculosis.*

No. 2. *Compilation of the Public Health Laws of North Carolina.*

No. 3. *Protection of Surface Water Supplies* with drainage area of less than 20 square miles.

No. 4. *Protection of Surface Water Supplies* with drainage area of from 20 to 50 square miles.

No. 5. *Protection of Surface Water Supplies* with drainage area of from 50 to 100 square miles.

No. 6. *Protection of Surface Water Supplies* with drainage area of over 100 square miles.

No. 7. *Rules and Regulations Governing Quarantine and Disinfection.*

No. 8. *Typhoid Fever.*

No. 9. *Medical Inspection of Schools and School Children.*

No. 10. *Care and Feeding of Babies.*

No. 11. *The Plague of Flies and Mosquitoes.*

No. 12. *Residential Sewage Disposal Plants.* .

No. 13. *Sanitary Privies.*

No. 14. *Hookworm Disease.*

No. 15. *Malaria.*

Any of these bulletins will be sent free, upon request, to any address in the State.

You can doubtless render a great service to some of your neighbors or friends by requesting this office to send them copies of such special bulletins as would probably be of interest or benefit to them. Request bulletins on tuberculosis, typhoid, etc., sent to homes in which there are cases of these diseases. It may mean the saving of much suffering and even life itself. *Can't you do it now?*

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EDITORIAL

TO THE PEOPLE: WHAT WE HAVE DONE WITH YOUR MONEY.*

DEVELOPMENT OF STATE'S APPRECIATION OF HEALTH WORK.

Since 1875 the preventability of disease, conceived and brought forth as a scientific possibility by the medical and allied professions, has developed through an awakened public interest into now a clearly proven, practicable, life-saving work that no state claiming any title to civilization can afford to disregard.

Coincident with the growth of a public confidence in the possibilities of health work, this State created a State Board of Health, and from time to time, as experience justified, has added to its powers. The Board was created by the General Assembly of 1877. The first annual appropriation for its use was $100, and was granted by the General Assembly of 1879. The General Assembly of 1881 increased the annual appropriation from $100 to $200. The General Assembly of 1893 increased the annual appropriation to $2,000, and the General Assembly of 1899 increased it to $4,000. Ten years later, in 1909, the General Assembly raised the appropriation to $10,500, and the last General Assembly, that of 1911, made the appropriation $22,500.

In 1905 the State Laboratory of Hygiene was established, and all public water companies were required to submit samples of their water monthly, or oftener when necessary, for analysis, for which they were required to pay to the Laboratory annually a tax of $64. With the increasing number of public water companies in the State this tax now amounts to $4,000 a year. It must be understood here that this tax is solely for the payment of the expenses of the analyses of the water, and for this reason it is questionable whether it should be included as a part of the revenue of the State Board of Health.

OUR PRESENT INCOME.

If we include the $4,000 collected from water taxes, with the $22,500 appropriation from the State Treasury for the use of the Board, as a part of the State's appropriation, we find that the total annual income of the State Board of Health amounts to $26,500. This money is used as follows:

WHAT WE DO WITH IT.

Item No. 1.—The State Laboratory of Hygiene examines annually 2,250 specimens microscopically. The specimens consist of particles of expectoration from suspected consumptives, mucus from the throats of suspected diphtheria patients, blood from suspected malaria patients, blood from those suspected of having typhoid fever, and pus or matter from discharging membranes. A minimum cost of 2,250 microscopic examinations would be $3,500. You may consider, then, that this $3,500 is one dividend paid by the State Board of Health to the people of the State on the $26,500 intrusted to the Board.

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*Taken from the Democratic Hand-book for the campaign of 1912.

Item No. 2.—Last year 2,500 samples of drinking-water were analyzed by the State Laboratory of Hygiene. The cost of an analysis of drinking-water varies from $5 to $10 in different laboratories. It would have cost the people of this State at least $12,500 to have had the samples of water analyzed at the minimum fee of $5 an analysis. The State Laboratory of Hygiene made these analyses for a total cost of $4,500, saving thereby $8,000 to the State. This is the second dividend which the State Board of Health pays upon the public's investment of $26,500 a year.

Item No. 3.—Last year 195 patients bitten by rabid animals were given the Pasteur treatment at the Laboratory of Hygiene. The efficacy of the treatment administered by our Laboratory may be judged from the fact that the average Pasteur Laboratory loses the life of one patient out of every 250 treated, while our Laboratory has treated over 500 patients without a single death. The minimum cost for which these people threatened with hydrophobia may obtain the treatment elsewhere is $65 a patient. It would have cost the 195 patients, at this figure, $12,675 to have been treated. As a matter of fact the State charged them only $600, thereby effecting a saving to the people of the State of $12,025. This is the third dividend returned to the people of the State by the State Board of Health on their investment of $26,500.

Item No. 4.—The General Assembly of 1911 gave the State Board of Health authority to contract with the manufacturers of reliable diphtheria antitoxin for a state supply of antitoxin, to be purchased from the lowest bidder, and to be distributed to the people through the State Laboratory of Hygiene and through antitoxin distributing stations in the counties, at just what it cost the State to buy it. We may say right here that the quality of all antitoxin is guaranteed by the United States Government. Antitoxin is sold in packages which are graded according to the number of units of potency *per* package into packages of 1,000, 3,000, and 5,000 units. The prices of these packages of antitoxin, before this arrangement on the part of the State was made, were as follows:

1,000 units	$2.00
3,000 units	5.00
5,000 units	7.50

Under the present arrangement the same antitoxin can be purchased anywhere in North Carolina at the following prices:

1,000 units	$0.50
3,000 units	1.35
5,000 units	1.95

The following table shows the amount of antitoxin distributed and the saving to the State for the first eight months of the operation of this new law, that is, until June 1, 1912, since which time we have not looked up the records:

Number Packages.	Size Packages.	Former Cost.	Present Cost.	Saving.
1,249	1,000	$ 2,498.00	$ 624.50	$ 1,873.50
1,071	3,000	5,355.00	1,445.85	3,909.15
1,182	5,000	8,865.00	2,304.90	6,560.10

Total saving in eight months	$12,342.75
Monthly saving	1,542.84
Yearly saving	18,514.08

As a matter of fact, this law is saving the State nearer $40,000 a year than $18,514.08, for just as soon as the State supply of antitoxin was available at these lower rates practically all antitoxin manufacturers reduced their product to about the same figure, so that the purchaser does not always get the State supply, but buys the antitoxin of other manufacturers, on which he gets practically the same reduction in price as he would in buying the State antitoxin. There is probably as much antitoxin sold by other manufacturers in North Carolina as is distributed by the State. This would bring the saving on this one item to somewhere in the neighborhood of $40,000 a year, but to be consistently overconservative in computing all of these items of economy, let us put down just $18,514.08 as a fourth dividend paid by the State Board of Health to the people on their investment of $26,500.

Item No. 5.—The State Board of Health was instrumental in securing from the General Assembly of 1911 a new law for the control of smallpox. A blank form sent out to the county superintendents of health, filled out and returned to this office, where the data which had been called for were compiled, shows: That for the five years previous to the operation of the new law there was an average annual number of 7,500 cases of smallpox in the State, and that the total cost to the State of handling the disease averaged $66,000 a year; that for the first year's operation of the new law (and it has been in force but a little over a year) there were 3,300 cases of smallpox in the State and the total cost was $2,600. This $2,600, deducted from the $66,000, leaves an annual saving of $63,400, which makes the fifth dividend the State Board of Health pays on the $26,500 turned over to it.

The five items above enumerated and considered amount to an annual saving of $125,439.08 on an investment in the State's health work of only $26,500. Health work appears to be good business, and these figures bear out the saying of Emerson that "The first wealth is health."

There are other items saved to the State which space will not permit us to discuss. We shall content ourselves with mentioning only one more, viz., the saving to the municipalities of North Carolina by the law requiring plans and specifications for proposed public water supplies and sewerage systems to be submitted, examined, and approved by the State Board of Health before being adopted by the town or city. The towns and cities have by this law been safeguarded against the work of cheap engineers and contractors and against spending their money in building waterworks or sewerage systems of little value. We know of one town that constructed a public water supply before this law was in operation, the plans of which never have been approved by the State Board of Health, and after completing the waterworks found that their plant was valueless and that they had lost something like $15,000 in the venture.

THE GREAT WORK OF THE STATE BOARD OF HEALTH,

its chief end, is not the saving of dollars, but the saving of lives. The real ledger of a state board of health is kept not in dollars and cents, but in death rates. While we take great pride in the economic showing set forth in the preceding figures, be it far from us to leave even the suggestion that our conception of a board of health is an economic institution.

The real test of the value of a state board of health is shown by its influence on the state's death rate—either a reduction of a death rate higher than the average state death rate or in the maintenance of an average or lower than the average state death rate. Unfortunately, there is no state law (and this is the great need of the health work in North Carolina) requiring the registration of deaths. There is a law requiring the registration of deaths for one-sixth of the population of the State that has been in force only two years, and that carries with it insufficient appropriation to permit of its enforcement to a degree of completeness that will permit rigid conclusions based upon the deaths registered during the last two years. We believe that if we had had a registration law thoroughly enforced in this State for the past three years, we would be able to show a reduction in the death rate from which we could estimate exactly the number of lives saved and the number of days of sickness prevented. And we believe further that in that showing the State Board of Health would most impress our people with its value.

Provisions for facilitating quick and accurate diagnoses through the microscopic examinations of specimens submitted to State experts, close supervision of public water supplies and the safeguarding of the people by a monthly analysis of all public water supplies against drinking polluted water, the more easily obtainable Pasteur treatment and diphtheria antitoxin, all operate in their more important spheres of action, not to save money, but to make prevention and treatment quicker and more effective and death rates lower.

But effective as these provisions must have been in reducing death rates, the most valuable work of the Board in saving life has been the instruction of all the people through press, special literature, and sanitary addresses as to the causes of the more important preventable diseases and the way to avoid them. The past year the State Board of Health has issued 40,000 regular bulletins monthly, carrying this life-saving information to 200,000 people, or about one white family out of seven. During this same time the State Board of Health has, through the kind and valuable coöperation of the press of the State, published 270 miles of columns of newspaper health matter. Through the Rockefeller Commission the State Board of Health has paid for the treatment of something like 12,000 people infested with hookworms, and practically all the representative people of North Carolina have been reached through sanitary addresses to the various organizations in the State.

THE DANGEROUS DOCTOR.

People Must Learn His Earmarks in Order to Shun Him.

The county superintendent of health of one of the most progressive and enlightened counties in this State, and a county, too, that has an exceptionally strong county medical society, writes:

> "I have a physician here in the county who does not report measles or diphtheria, to my positive knowledge. This week he lost a case of diphtheria that was never reported as to infection or death, nor was same quarantined or fumigation or disinfection advised. Further, after being solicited by the parents to use antitoxin, he refused to do so."

Of the duties assigned to the State Board of Health, by section 3, chapter 62 of the Public Laws of North Carolina, one of the most important is to inform the people as to the various sources of mortality.

Within the last four months the writer has been informed, by two county superintendents of health and by two reputable physicians, of five cases of diphtheria, four of which terminated fatally, that were not treated by the attending physician with diphtheria antitoxin. However, four of the five cases had been diagnosed "membranous croup," and this, every physician, with any kind of a title to worthy membership in even a mediocre medical profession, knows is a form of diphtheria.

Now, if there is any authority in the whole medical profession that does not thoroughly indorse the antitoxin treatment of diphtheria we have never heard of it. If there is any practice in the treatment of disease in favor of which high professional opinion is absolutely unanimous, it is the use of diphtheria antitoxin as the sheet-anchor in the treatment of diphtheria. If there is any contra indication except immediately impending and unavoidable death to the use of this great remedy in diphtheria we are unaware of it. We know that in a very exceptionally few cases of diphtheria that the use of diphtheria antitoxin produces a case of hives, or painful joints, or a slight albuminuria, and in that condition, so rare as to be classed a disease curiosity, the *status lymphaticus,* the *puncture of the hypodermic needle* in the injection of the antitoxin serum has produced death.

These rare disagreeable accompaniments to the antitoxin treatment are so extremely rare that they are not deserving of being considered a danger in the use of antitoxin. Any physician who would refrain from using antitoxin in the treatment of diphtheria because of the remote possibility of one of the above conditions arising in his patient might be likened unto a soldier who objected to carrying firearms because of the comparatively few accidents in military service in which the soldier had shot himself. Diphtheria antitoxin has reduced the fatality of diphtheria from 33⅓ and 66 per cent to about 5 per cent.

In our honest and conservative opinion, any physician who treats a case of diphtheria (or membranous croup, for membranous croup is diphtheria) without the use of diphtheria antitoxin, except where it is impossible to obtain antitoxin, is guilty of malpractice, and in case of the death of his patient the family would perform a high public duty to bring suit for heavy damages against such murderous professional ignorance. Moreover, experts to testify that the treatment of membranous croup, or any other form of diphtheria, without antitoxin is a form of gross malpractice will not be hard to find. The writer has heard of too many such cases as those mentioned above, and the treatment of diphtheria in North Carolina without antitoxin ought to be a dangerous thing for any medical licensee to be guilty of. We do not know of a form of medical practice which, in our opinion, is more deserving of prosecution as malpractice than this, and if necessary we will state this opinion in any court of the State if called upon to do so; moreover, we are very confident that we can furnish a jury with such evidence that they will justify us in our opinion.

THE CHEAP, COSTLY DOCTOR.

The argument has been successfully advanced in the General Assembly of the State that, in the remote mountainous portions of North Carolina the professional inducements were not sufficient to secure a first-class medical profession, and, therefore, it was necessary for the State to permit medical men not sufficiently prepared to obtain a medical license by standing an examination before the Board of Medical Examiners to practice in that section; that a physician who had spent from four to six thousand dollars and from six to eight years of his life in obtaining a medical education would not locate in these remote mountainous sections of our State. Therefore, in order that the people living in that part of the State may have a half a loaf where they cannot obtain a whole loaf, these less well prepared, cheaper physicians have been granted a limited license to practice their art. It was one of these limited license practitioners who had treated three of the above cases of diphtheria without antitoxin and had lost them all.

Now, this pertinent question arises right here: Would not the families who confided the life of their child to this man have been many times better off had they been unable to obtain his services? Being unable to obtain the cheap doctor, would they not have sent maybe twice or thrice the distance and obtained a man who would have cost them a little more money, but vastly less of their most precious possession—the life of their child? Reduced to its last analysis, this doctor who diagnosed membranous croup and failed to use diphtheria antitoxin killed those children, for had it been impossible for him to have attended them, the family would have obtained medical service that would have easily saved the lives of these three children. However, not all physicians who treat diphtheria and membranous croup (the antique term for laryngeal diphtheria) without antitoxin are in the remote rural sections of our State. As we have stated, the man referred to in the letter quoted above lives in one of the very best counties of North Carolina. Another medical licensee included in the above reference practices in one of the largest towns of North Carolina. The lesson to be drawn from the concrete example cited is this: *The financially cheap doctor is often a vitally expensive one.*

Before the writer entered the medical profession and became acquainted with the economic and ethical principles involved in the practice of medicine, he regarded the community with a doctor who charged little for his service and who never insisted upon the payment of his bills as fortunate; he likewise regarded the town where medical attention could be obtained at $1 a visit as having an advantage over a town where a professional visit cost $1.50. This opinion of the writer's youth is shared by many good and sensible people of to-day. Such an idea, however, is a mistake. Those people living in places where the physicians get $1.50 instead of $1 per visit are better off, so far as the safeguarding of their life from diseases is concerned, than those living in a community where physicians are paid the smaller rates. Why? Because, as a rule, the man who has spent four years in college, four more years in a medical school, and from one to two years in hospital service can command, on a competitive basis, better compensation than the cheaper man; therefore, as a rule, he would not locate in a town where, although he would get his share of the practice, there would be enough cheap competitors to make the financial consideration no great inducement. The best men will locate in those places where the people pay for what they get—the best service.

And right here we wish to go one step further and point out the pernicious influence of the physician who cuts prices. His influence is to reduce, by competition, the compensation for efficient medical service, which tends to react against the location of the more efficient physicians as his neighbors. He is not a community asset, but a community handicap.

In medicine, as in everything else, the purchaser usually gets what he pays for, with the exception that cheap medical service is very probably the most expensive economy possible, because it tells on life itself.

SOME TAXES SAVED.

A doctor writes us that he found it necessary in treating a malignant case of diphtheria in a child of fourteen months, to use 84,500 units of antitoxin before effecting a cure.

The General Assembly of 1911 enacted, among a number of other health laws, a law providing $1,000 a year for the use of the State Board of Health to be expended in arranging for a State supply of diphtheria antitoxin, and distributing such a supply to the consumers at just what it cost the State at a wholesale contract price. Before this law was enacted the price of diphtheria antitoxin in North Carolina was as follows:

Minimum dose, 1,000 units	$2.00
Medium dose, 3,000 units	5.00
Maximum dose, 5,000 units	7.50

Antitoxin can now be obtained anywhere in North Carolina at the following rates:

Minimum dose, 1,000 units	$0.50
Medium dose, 3,000 units	1.35
Maximum dose, 5,000 units	1.95

The antitoxin used in treating this child before provision was made for the furnishing of the State supply at a wholesale rate, through the State Board of Health, would have cost $126.75. Under the present arrangement the antitoxin used in treating the child cost $32.95. There was thus saved to the family $126.75 — $32.95 = $93.80.

There is at least one taxpayer in the State that has "no kick coming" on what he gets for his taxes.

This, we admit, is an exceptional case, but it is one of thousands where a large part of a citizen's taxes have been thus indirectly returned to him through the provision of our State Government in supplying antitoxin at wholesale rates. This is State government on the wise and economic principle of the coöperative store, and at an expenditure of about $1,000 a year the State saves the people more than $25,000 a year.

POSTSCRIPT.

Another letter under date of August 16th, from Dr. Headen, the doctor referred to in the foregoing editorial, is as follows:

> In reply to your letter of the 14th, concerning the case of diphtheria of fourteen-months-old child in which 84,500 units of antitoxin was used, will say that I exhausted the Alexander [the State] supply and also the Mulford supply at special prices, and the last dose, 22,500, which I ordered from New Bern at the old price, cost **$36**. This dose at the contract price which the State has with Alexander Company would have cost $8.77. I used—

38,000 units Mulford's (B. H.), cost	$21.50
24,000 units Alexander Company	10.50
22,500 units Mulford's	36.00

It will be observed from the above letter that the doctor paid 44 cents per thousand for State antitoxin, 57 cents per thousand for Mulford's antitoxin when it was being sold in competition with the State antitoxin, but that when Mulford's competitor, the State Board of Health's supply of antitoxin was exhausted, that Mulford's antitoxin immediately jumped from 57 cents to $1.50 per thousand units.

NORTH CAROLINA SETS THE PACE.

An examination of the General Report of the Rockefeller Sanitary Commission, on page 204 of this BULLETIN, will reveal the clear title of this State to a position of leadership in the crusade against hookworm disease. In that report comparative figures for the work in the different states in which this work is being conducted are given under six different items—items Nos. 1, 2, 3, 4, 5, and 8. North Carolina leads in every subdivision of items 1, 3, 4, and 5; leads again in two out of three subdivisions of item 2, and in two out of five subdivisions of item 8.

The explanation of the greater progress of the hookworm work in this State and the honorable position our State holds among the other states engaged in the work, is the man in charge of the hookworm campaign in North Carolina—Dr. John A. Ferrell.

PRIVIES: EARTH-CLOSETS.

(Taken from "Lessons in Gynecology" by GOODELL, and used here through the courtesy of the publishers, The F. A. Davis Company, Philadelphia and New York.)

"'The sublime,' writes the great Burke, 'is an idea belonging to self-preservation.' Emboldened by this definition, I shall offer no apology for addressing you this morning upon an unsavory subject. For it is one—as I hope to prove—closely allied to the moral and physical well-being of the mothers and daughters of this land, to the vigor of their offspring, and, as a consequence, to the health and happiness of the community, and to the strength of the State. . . .

"In adults, the state of health denotes a state of equilibrium between wear and repair, between construction and destruction. But the statical condition is one necessarily disturbed by the smallest casting-weight. Hence, very slight indeed may be the cause which deranges the nicely balanced relation between the functions of the various organs of the body. Thus, by the imperfect and unpunctual performance of the excretory functions our food becomes our poison. The lengthened detention of feces in the bowels, or of the urine in the bladder, begets a host of disorders, in man as well as in woman. . . .

"For, if diseases breed from bad drainage and defective sewerage from without the body, how much more from bad drainage and defective sewerage within the body! Excretions retained in the body ferment and decompose; the pestilential gases thus generated, and the products of tissue waste, being resorbed, degrade the blood, disable nerve centers, and paralyze the action of the vital organs. . . .

"'Probably no single cause,' writes a close observer, 'has had such influence in producing the peculiarly delicate condition for which women living in the country and in the small towns in America are notorious, as the discomfort, inconvenience, and frequent repulsiveness (and, I may add, indecent exposure) of their closet accommodations.' . . .

"In the small houses of tradesmen and of mechanics the water-closet is rarely to be found; nor are the houses of the better classes always supplied with this luxury. The privy is, then, usually placed at the farther end of the yard, and approached by a long and unsheltered path. It is, therefore, almost inaccessible in bad weather or on dark nights, and is overlooked by the back buildings of all the neighboring houses. To a delicate woman, the exposure to the weather is a serious risk; to one who is menstruating, it is a constant menace; while to the refined woman, the exposure to view compels the postponement of her physical duties to nightfall, or until driven to them by a sheer necessity which knows no law.

"Nor does the condition of the closets in the country present a more agreeable contrast. In many parts of the southern and the western states a clump of bushes, the shelter of a rock, the nearest grove, afford the only accommodations. But, take the most thickly settled states: where is the small farmhouse whose privy invites, rather than repels, an operation of the bowels? The very name of *privy* is a misnomer. How seldom is the building hidden by clumps of evergreen, or masked by any other disguise than that of an euphemism! . . .

"The shrinking from publicity in the performance of these functions is neither 'prudery' nor 'false modesty,' but a virtue of which our women may well be proud. In those countries where woman most disregards it, there is she least chaste, and there is the license of language least bridled. Whatever refines the body refines the mind, and conversely. The one reacts upon the other for better, for worse. Our remote forefathers, who scorned clothing and cleanliness, and who eased themselves, like their cattle, wherever the desire seized them, were in appetite little better than cannibals, in temper and morals lower than the brutes. When they began to wash themselves, they began to clothe themselves; and, after the culture of the body, that of the mind followed as a matter of course. Thus soap becomes a great civilizer. 'Show me,' said the great Liebig—or in words to this effect—'show me the nation which consumes the most soap, and you show me one which has reached the highest grade of civilization.' So with regard to closets. 'Show me,' say I, 'the nation that gives the most comfort, the most privacy, the most solicitation, to the evacuations of the body, and you show me, in refinement, in education, and in morality, the foremost people on the face of the earth.'

"I have told you the bane; now what is the antidote? Clearly, such closets as a civilized Christian people—a people living in the nineteenth century—are not degraded in using; closets that are decent, comfortable, and accessible; *closets that invite rather than repel;* those in which an operation of the bowels is not tantamount to being buffeted by Satan for a season. . . .

"You must select the one which seems to you to meet best all the requirements. I am contending simply for the principle on which these earth-closets are based, and for the moral and the hygienic advantages which they offer. A portable closet, like this one,* not larger than an old-fashioned arm chair, can be moved about from room to room, or be put where it will be both private and accessible. Nor will its presence poison the surrounding air, for there is no better disinfectant, no better deodorizer of organic refuse, than the dry earth contained in its hopper. Recognizing this property of earth, and also the law of health, a wise Deity has, as the Creator, implanted in carnivorous animals the instinct of burying their excrement. As the great Lawgiver, He commands the Jews to do the same thing. What cats and dogs do by instinct, man should do as well by instinct as by divine command."

EDUCATION AND PUBLIC HEALTH.

(From an address before the North Carolina Health Officers' Association at Hendersonville, N. C., June 17th, by HON. J. Y. JOYNER, State Superintendent of Public Instruction.)

In all this universe, power is largely ineffective save as it finds expression through some sort of machine. The rivers run down to the sea with the mighty power of their unbridled currents wasted until it be harnessed to the manifold machines of man and made through these to minister in countless ways to his service and his happiness.

Steam is but an invisible and helpless product of fire and water vanishing into this air to mingle again with the elements until it be confined and hitched to man-made machines and through these made the chief servant of the world's labor and commerce.

Electricity, most pervading and mysterious of all Nature's forces, served but for the excitation of man's wonder until he learned to transmute it into a thousand forms of effective service through machines.

So it seems God's law that power must be made effective for service through machines. It is not strange, therefore, that it should be ordained that the mightiest powers in the universe, the mind and soul of man, should become effective for service only through the medium of a machine that men call the body, divinely designed and perfectly adapted to its purpose.

Men must be taught and must learn that the efficiency of this service is largely dependent upon the efficiency, strength, and perfection of this machine; that the length of the service is absolutely dependent upon the life of the machine, and that, therefore, one of the chief duties of man, one of the chief ends of education, is the care and preservation of this wonderful machine, that it may at all times respond with the least friction, pain, and loss of power to the divine forces within it.

It is axiomatic, then, that health and its laws, a knowledge and observance of which is essential for the preservation of the strength and efficiency of the body and for the prolongation of its life, should constitute a necessary and most important part of man's education.

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*Referring to a closet exhibited before a class to whom the author was lecturing.

UNAPPETIZING TRUTH.

(From an address by Dr. Charles Wardell Stiles, on "The Full-Time County Health Officer, the Most Important Factor in Public Health Machinery," delivered before the North Carolina Health Officers' Association at Hendersonville, N. C., June 17, 1912.)

Those privies come under the control of the city or the county health officer, and I venture to believe that if the Federal Government undertook to-day to compel Charlotte, Durham, Raleigh, or Wilmington to do away with the dirty, filthy, disease-spreading surface privies that are daily supplying the food of the inhabitants of those cities with human excrement from both whites and negroes, the Senators and Congressmen of this State would be deluged with telegrams of protest against what would be called an illegal and unjustifiable interference by the Federal Government in local affairs. The whites and the negroes of those and of other similar cities and towns are not eating at the same daily dinner table, but they are daily supplying each others' tables with human excreta and to a certain extent it is their local privilege to continue this highly refined diet as long as their intelligence or their appetite dictates. When they finally satisfy their appetite, it will devolve upon the local health officer, not upon a Federal Department of Health, to reduce the unnecessary deaths in these cities by advancing the sanitary arrangements to correspond with the knowledge of the present generation regarding the prevention of disease.

I do not mean to assert that all the whites and all the negroes of Charlotte, Durham, Raleigh, and Wilmington really prefer the excreta of their own race or of the opposite race, as a daily condiment, but that the sanitary conditions of these cities as I last saw them seem to indicate that the majority of the inhabitants of these towns have not yet awakened to the nature of their daily food. Somebody must instruct these deficiently trained intellects as to just what is happening. . . .

Let me assume now that the teachable whites and the teachable blacks are all taught the danger of their present daily fecal diet. There will still remain some landlords and some tenants who are either so abnormal in intelligence or superabnormal in greed for gold, and so deaf, dumb, and blind as to their duties to their fellow-men, that they will have to be coerced into giving up their daily fecal diet and into refraining from distributing this diet to their neighbors. . . .

"THOU SHALT NOT KILL."

What we are trying to do now is to extend the definition of the word murder, not restrict it. We are trying to apply the word to the crimes by which a food manufacturer kills children with bad beef; a rich patent-medicine swindler destroys children by doped medicine; a rich factory owner destroys men and children by long hours and poorly protected machinery.—*Collier's, August 3, 1912.*

WHY WORRY ABOUT SMALLPOX?*

DR. T. D. TUTTLE,
Helena, Mont.

JOPLIN, MONT., April 14, 1912.

DEAR DOCTOR:—As there are so many here who are alarmed over a case of smallpox, I would ask your advice. Dr. A. E. Ripperton declares it a well-developed case of smallpox and it is admitted that he had been exposed in North Dakota just before coming here. Dr. Almas of Havre informed the doctor here that there was no quarantine law here. Dr. Ripperton, at the request of the people, put up a smallpox placard, but a number of the people seem to mingle there just the same, and as a result the whole town is running a risk of being exposed. What would be the proper safeguard?

Hoping to hear from you by return mail, and thanking you in advance for your favors, I am,

Respectfully,
(Signed) H. A. NELSON.

MR. H. A. NELSON,
Joplin, Montana.

HELENA, MONT., April 16, 1912.

DEAR SIR:—In reply to your favor of the 14th, would say that the State Board of Health does not require quarantine for smallpox.

Quarantine is a mere makeshift. You have a sure preventive in vaccination. There is no sense in anybody having smallpox unless they want it. Therefore, why should the people pay for quarantine? There is one way to prevent smallpox, and that is vaccination. If you are vaccinated, you have nothing to worry about. If you are not vaccinated, take your choice between vaccination and smallpox. You will be sure to have one or the other sooner or later.

Yours very truly,
(Signed) T. D. TUTTLE, *Secretary.*

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*Copy of letter and reply to and from Secretary Montana State Board of Health.

QUARTERLY REPORT FROM ROCKEFELLER COMMISSION, WASHINGTON, D. C.

GENERAL SUMMARY WITH NOTES.

1. The total number of persons treated up to June 30, 1912, is 221,268.

SUMMARY OF PERSONS TREATED.

	Physicians.	Staff.	Total.
To December 31, 1911	53,167	87,211	140,378
January 1 to June 30, 1912	15,210	65,680	80,990
Totals	68,377	152,891	221,268

State.	To December 31, 1911.		Jan. 1 to June 30, 1912.		Total.
	Physicians.	Staff.	Physicians.	Staff.	
Alabama	3,870	19,489	3,614	1,720	28,693
Arkansas	1,500	287	66	91	1,944
Georgia	7,228	972	367	5,051	13,618
Kentucky				367	367
Louisiana	1,197	8,232	1,673	10,937	22,039
Mississippi	15,803	19,296		10,012	45,111
North Carolina	16,709	29,172	9,043	18,734	73,658
South Carolina	1,774	3,246		14,791	19,811
Tennessee	666	2,069	447	2,453	5,735
Virginia	4,420	4,448		1,524	10,392
Totals	53,167	87,211	15,210	65,680	221,268

2. In getting persons treated, the quarter just ended shows gratifying increase over any previous quarter. Total number of persons treated last quarter is 22,724; total number of persons treated this quarter is 42,956.

PERSONS TREATED.

State.	Quarter Ending March 31, 1912.	Quarter Ending June 30, 1912.	Total.
Alabama	361	1,359	1,720
Arkansas	66	25	91
Georgia	1,713	3,338	5,051
Kentucky		367	367
Louisiana	4,541	6,396	10,937
Mississippi	2,617	7,395	10,012
North Carolina	9,261	9,473	18,734
South Carolina	3,669	11,122	14,791
Tennessee	496	1,957	2,453
Virginia		1,524	1,524
Totals	22,724	42,956	65,680

3. Total number of counties having made appropriations for free dispensaries up to June 30, 1912, is 153:

DISPENSARIES—APPROPRIATIONS MADE.

STATE.	Counties in State.	To Dec. 31, 1911.	Jan. 1 to June 30, 1912.	Total.
Alabama	67	14	5	19
Arkansas	75	1	----------	1
Georgia	146	2	13	15
Louisiana	59	9	5	14
Mississippi	79	13	12	25
North Carolina	100	27	15	42
South Carolina	43	4	13	17
Tennessee	96	5	8	13
Virginia	100	3	4	7
Totals	765	78	75	153

4. The infection survey has been completed in 135 counties.

INFECTION SURVEY.

STATE.	To Dec. 31, 1911.	Jan. 1 to June 30, 1912.*	Total.
Alabama	2	----------	8
Arkansas	9	6	9
Georgia	2	----------	8
Louisiana	10	6	10
Mississippi	17	----------	29
North Carolina	21	12	38
South Carolina	3	17	10
Tennessee	13	7	13
Virginia	10	----------	10
Totals	87	48	135

5. The sanitary survey has been completed in 172 counties.

SANITARY SURVEY.

STATE.	To Dec. 31, 1911.	Jan. 1 to June 30, 1912.*	Total.
Alabama	7	8	15
Arkansas	11	----------	11
Georgia	11	7	18
Louisiana	11	----------	11
Mississippi	9	12	21
North Carolina	44	10	54
South Carolina	4	8	12
Tennessee	14	----------	14
Virginia	14	2	16
Totals	125	47	172

*It is known that these reports are not complete.

6. The half year just ended shows a marked increase in microscopic work.

MICROSCOPIC EXAMINATIONS.

To December 31, 1911	90,724
January 1 to June 30, 1912	110,682
	201,406

7. The dispensaries in South Carolina, Tennessee, and Virginia have reached the point of conscious power and success this quarter.

PERSONS TREATED AT DISPENSARIES.

	1911.	This quarter.
South Carolina	2,436	11,122
Tennessee	665	1,802
Virginia	594	1,116

8. The following table summarizes additional activities for the quarter:

STATE.	Examination of		Total No. Treatments.	No. Lectures.	Attendance.
	Homes.	Children.			
Alabama	923	599	1,514	46	--------
Arkansas	2,193	----------	--------	222	11,973
Georgia	1,129	1,392	3,959	100	8,090
Kentucky	625	----------	--------	76	14,586
Louisiana	2,608	3,704	--------	100	9,415
Mississippi	2,850	11,090	17,833	170	19,604
North Carolina	1,010	8,918	19,106	287	34,131
South Carolina	876	869	19,531	--------	--------
Tennessee	461	----------	3,131	39	4,644
Virginia	270	----------	2,033	42	3,493
Totals	12,945	26,572	67,134	1,093	105,936

9. Both the reports for the quarter and the correspondence indicate greater activity in building sanitary privies than during any previous quarter. The definite results accomplished by the county health officer in Tennessee and the reports on sanitary privies by physicians in Georgia are worthy of special notice as being new agencies in the work.

10. Conditions for opening dispensary work in Kentucky are thoroughly ripe and the work will begin within two weeks.

11. The work has opened in Texas with the appointment of Dr. M. H. Boerner as State Director.

A REPORT OF FIVE HUNDRED CASES TREATED WITH ANTIRABIC VIRUS AT THE STATE LABORATORY OF HYGIENE.

C. A. Shore, M.D., Director, Raleigh, N. C.

In 1908 the first patient applied for the Pasteur antirabic virus at the State Laboratory of Hygiene, and up to May 31st of this year over 600 persons had been treated and at least as many had consulted us about bites from dogs which proved not to be rabid. We are indebted to the Hygienic Laboratory at Washington for the virus for treatment in the great majority of the cases.

The treatment of the five hundredth patient was completed February 12, 1912, and we can definitely report that there have been no failures of treatment up to the present time. The statistics in this paper are based on the first 500 treated. There was one death of a patient who refused treatment, although badly bitten. This occurred in 1910 in Durham. In almost all cases the patients applied for treatment within a few days after infection, but in several instances the patients were not alarmed until the death of animals which had been bit by the same dog which bit them. At one time, after the death of a young man from rabies in Hope Mills, over thirty people claimed to have been bit by the same dog that bit him.

The patients treated may be classified as follows:

White, 444; colored, 56. Male, 368; female, 132.

Age under 15, 267; 15 to 50, 201; 50 and over, 32.

Infected by dogs, 319; by cats, 42; by cows, 3; by horses, 5; by man, 1.

These patients came from 60 counties, as follows:

Alamance	18
Anson	3
Bertie	3
Bladen	3
Brunswick	2
Buncombe	5
Burke	1
Cabarrus	9
Caldwell	4
Caswell	3
Chatham	6
Cleveland	3
Columbus	1
Craven	2
Cumberland	41
Davidson	5
Davie	4
Duplin	15
Durham	13
Edgecombe	11
Forsyth	13
Franklin	20
Granville	11
Greene	7
Guilford	38
Halifax	7
Harnett	3
Haywood	4
Iredell	7
Johnston	17
Lee	9
Lenoir	7
McDowell	1
Martin	2
Mecklenburg	4
Montgomery	1
Moore	8
Nash	11
Northampton	2
Onslow	1
Orange	3
Pender	10
Person	2
Pitt	3
Randolph	10
Richmond	11
Robeson	4
Rockingham	15
Rowan	15
Sampson	4
Scotland	6
Stanly	1

Stokes	11
Surry	7
Union	2
Vance	3
Wake	40
Warren	11
Wayne	9
Wilkes	1
Wilson	7
	500

1 to 521, inclusive; 21 failed to complete treatment.

A positive diagnosis of the disease was made in 369 cases; a diagnosis by clinical history in 131 cases. In 10 or 12 of the latter treatment was given when infection was doubtful. Application for treatment by months was as follows:

January	39
February	16
March	42
April	37
May	51
June	58
July	26
August	26
September	46
October	64
November	52
December	43

During the same period, or, more accurately, from July, 1908, to May 31, 1912, we have examined 350 rabid animals, as follows:

Dogs	314
Cats	25
Cows	5
Horses	2
Mule	1
Hog	1

These animals were received by months as follows:

January	36
February	26
March	47
April	46
May	38
June	18
July	14
August	14
September	19
October	33
November	31
December	28

It will be seen that the smallest number were received in midsummer months, disproving the old theory of the relation between the so-called dog days and the disease. It is seen that the disease shows no special predilection for any particular season, and this is in harmony with statistics throughout the world, which prove that it may occur in any climate, latitude, or season.

These animals came from 60 counties as follows:

RABID ANIMALS.

Alamance	14 dogs
Anson	1 dog
Bertie	3 dogs
Bladen	3 dogs, 1 cat
Brunswick	1 dog
Buncombe	5 dogs
Burke	2 dogs
Cabarrus	7 dogs, 1 cow
Caldwell	2 dogs
Caswell	1 dog
Chatham	5 dogs
Cleveland	1 dog
Columbus	2 dogs
Craven	1 dog
Cumberland	8 dogs
Davidson	7 dogs, 2 cats
Davie	2 dogs, 1 cat
Duplin	4 dogs, 1 cow, 1 mule
Durham	7 dogs
Edgecombe	12 dogs, 1 cat
Forsyth	12 dogs
Franklin	5 dogs, 5 cats
Gaston	2 dogs
Granville	5 dogs. 1 cat
Greene	4 dogs, 1 cat
Guilford	17 dogs, 1 cat, 1 cow, 1 horse, 1 pony (2 horses)
Halifax	10 dogs, 1 cow
Harnett	3 dogs
Haywood	3 dogs, 1 cow

Henderson	1 dog
Iredell	4 dogs
Johnston	16 dogs, 1 cat, 1 hog
Lee	3 dogs
Lenoir	5 dogs
Martin	2 dogs
Mecklenburg	4 dogs
Moore	8 dogs
Nash	7 dogs, 1 cat
New Hanover	1 dog
Orange	2 dogs
Person	2 dogs
Pitt	5 dogs
Polk	2 dogs
Randolph	6 dogs
Richmond	7 dogs, 1 cat
Robeson	4 dogs, 1 cat
Rockingham	6 dogs
Rowan	2 dogs, 2 cats
Rutherford	1 dog
Sampson	3 dogs, 1 cat
Scotland	6 dogs
Stanly	2 dogs
Stokes	2 dogs
Surry	5 dogs
Union	1 dog, 1 cat
Vance	2 dogs, 1 cat
Wake	34 dogs, 1 cat
Warren	4 dogs, 1 cat
Wayne	10 dogs
Wilson	8 dogs, 1 cat

Before this work was taken up in our Laboratory all persons bitten by rabid animals were compelled to go to northern cities for treatment. Just how much has been saved to the State cannot be estimated accurately, but it is certain that it is more than $100 for each patient treated, or a total for the 500 of $50,000. It may be well to state here that the work was undertaken without any extra appropriation and has been carried on without cost to the State. During the last four years there have been five deaths from rabies in the State, all in untreated persons: one in Durham County, one in Lenoir, one in Stokes, one in Cumberland, and one in Nash. We have not been able to secure statistics as to the loss of live stock, but it is annually very large. We get almost daily information about the death of horses, cattle, and hogs in various parts of the State, and the total loss would be astonishing.

The suffering, distress, and loss caused by this disease cannot be realized except by those who see it daily. There is no wish to exaggerate its importance, and we know that, fortunately, it is not comparable to tuberculosis and typhoid fever and many other diseases; but so far as I know, it is the only disease which could be abolished by legislative enactment. Our faithful friend, the dog, is directly or indirectly responsible for its dissemination. All mammals are susceptible to the disease, but with few exceptions other animals outside the canine group do not exhibit the mania for biting when attacked by the disease.

A law, strictly enforced, requiring the proper muzzling of all dogs that run at large would stamp out the disease in a few years. This has been accomplished in both Germany and England, where the disease was prevalent twenty years ago. It has never entered Australia, because every dog shipped into the country must be quarantined for six months before he can be delivered to the purchaser.

The law should be State-wide, for it is not unusual for a rabid dog to run 20 or 30 miles, and local regulations are of minor value. There is a State law at present which provides a penalty for failure to kill a dog which has been bit by a rabid animal, but the law is seldom enforced.

Many cases of the disease are not recognized in dogs, for there is great variation in symptoms, and frequently paralysis sets in before the furious stage is reached. Formerly, the veterinarians were prone to give other names to the paralytic type, but I believe the disease is now generally recognized and reported. It is strange that the sentimentalists are so loath to accept the facts. It would be a far more serious charge against the dog to claim that he naturally was subject to attacks of fury, and it is far kinder to him to protect him as well as man from the disease. The disease never develops spontaneously nor from starvation, excitement, nor fear; it is infectious and conveyed only by inoculation, which is usually by means of a bite from the infected animal.

A general acceptance of these facts should lead to the necessary law prohibiting the running at large of unmuzzled dogs.

ADDRESS OF PRESIDENT NORTH CAROLINA STATE HEALTH OFFICERS' ASSOCIATION.

By L. B. McBrayer, M.D., Asheville, N. C., before Second Annual Session, Hendersonville, N. C., June 17, 1912.

I congratulate the health officers of North Carolina, and others interested in public health, on the convening to-day of the second annual session of the North Carolina State Health Officers' Association in the beautiful city of Hendersonville.

I desire to express to you my appreciation of the honor you conferred upon me by electing me to the high position of first president of your association. And while I have not been unmindful of the honor thus conferred, at the same time I have not failed to realize that this high honor carried with it an equal amount of duties and responsibilities. You intrusted to my care and keeping, for the year that is now closing, this infant organization still swathed in swaddling clothes. I sincerely trust that we will have abundant evidence here to-day that this babe has grown into a healthy, vigorous, lusty youth, ready to do battle in the cause of public health, and to take its place as an important unit among the factors that shall soon make our grand old State the healthiest and best place in all this world in which to live; and shall soon make our people; our children and our children's children, a "race of God-like Americans, perfect in face and form and intellect."

The Health Office is the corner-stone, the capstone, the key to the arch in public health work. You will all recognize the familiar quotation, "Paul may plant and Apollos may water, but God alone can give the increase." And so in health work; we may have our Rockefeller Institute for Medical Research; we may have, some time, if you please, our National Department of Health; we may have our State Laboratory of Hygiene; we may have our splendid State Board of Health, composed, as it is, of the ablest men in our Commonwealth, in our profession or out of it; we may have our splendid and efficient Secretary of the State Board of Health, and his able assistant for the eradication of hookworm disease, and other assistants; we may have our National Association for the Study and Prevention of Tuberculosis, and our International Congress of Hygiene and Demography, and our Child Welfare Societies, and our hundreds of other international, national, state, and local societies, civic associations, etc.; but all this without the Health Officer would be of little or no avail. The Health Officer must carry the message to Garcia; the Health Officer must take the accumulated wisdom of the ages; he must take the valuable information worked out by the agencies mentioned, and many others unmentioned, on preventive medicine, hygiene, sanitation, eugenics, and allied subjects, and carry it to the people. He is the connecting link between all this fund of accumulated information and the people, for whom it is intended, and to whom it rightfully belongs.

What would the message to Garcia have been worth had it never reached him? How would it ever have reached him without the man to carry it? Who is to carry the gospel of sanitation and good health to our people? The Health Officer, if it is ever done. Who is to go into our schools and examine the dullards, the backward children, the ne'er-do-wells, and make out of them, ofttimes, bright, intelligent, tractable, cheery children, and in the fruition of time, good, useful, happy citizens, instead of ignoramuses, paupers, and criminals? The Health Officer, if it is ever to be done.

Who is to study the incidence of the preventable diseases in your county and mine, in your town and mine, among your people and mine, among your children and mine, and put into practical use the known means of preventing these diseases and save the lives of our people, of your children and my children? The Health Officer, if it is ever done.

Is there any reason why a certain town in this State should have a death rate four times as high as the one time pest-ridden Canal Zone? Is there any reason why in a certain town in this State in a family of eight all of them would be dead, which in the same period if they lived in the one time pest-ridden Canal Zone six of them would be alive and in good health? There is no reason except that in the Canal Zone the Health Officer, that prince of sanitarians, Dr. Gorgas, has sufficient authority and money to carry into effect proper health measures, while in the town under consideration the Health Officer has neither authority nor money. Do you think intelligent people will continue to live in a town where they know for a certainty that their family will be exterminated by preventable diseases four times or three times as quickly as in a certain other town? The same is true of a county or a state. Who is going to change this sad state of affairs? The Health Officer, if it is ever done.

The *Toledo (Ohio) Blade* has well said: "The conservation of public life is becoming a great social question, one in which society is taking over responsibilities and functions left heretofore in the hands of the individuals." Public health is not altogether an individual matter any more, but it is a community interest. All the conditions of life and of living enter into the causation or suppression of disease. Many of the factors are beyond the control of the individual. They can only be controlled by society acting in an organized and effective manner; that is, by the State; but the State can delegate part of its power, authority, and detail work to the county or municipality.

There is an awakening of interest among the people in regard to public health such as has never been known on any other subject. It is impossible to calculate the potentiality of the energy that is being expended to-day in the prevention of disease and the perfecting of the human race. It has not reached its floodtide. The many congresses, commissions, societies, etc., referred to a moment ago, bear out the statement. It is necessary that this energy shall be directed in proper channels, in channels that will produce results. It would be fatal to our cause to allow this energy to go to waste. If this energy is wisely directed, it will only be a short time until we will have all the money we need to prosecute our work. States, including our own, are making appropriations never dreamed of a few years ago, and are ready to increase these appropriations just as soon as we show them that we are producing results with what they have given us, and can show them intelligently and specifically that we need more.

The United States Government has been doing some public health work through its Department of Agriculture, which, of course, was never organized for the purpose of improving the health and thereby lengthening and making more profitable and happy the lives of our people, but was organized for the purpose of protecting the lives of our farm animals, and protecting and making more prolific our fruits and forests, and making the seed we plant more fertile.

Another branch of the United States Government that has taken up public health work, all of its own accord, because the splendid men, the loyal, faithful doctors that man this service could not keep out of it, is the United States Public Health and Marine Hospital Service. The United States Army has also done valuable work in the cause of public health; and I might mention others, but this is sufficient to prove to you that while the United States Government, as I say, has been doing some public health work, yet it has done it mostly because men, for the most part doctors, be it said to the credit of our profession, could not and would not stand aloof from it, and not because of any fixed policy of our Government; not because any department has been charged with this particular work. In other words, these various departments and bureaus have enlisted, and have been doing valuable service in the cause of public health, in spite of the Government, as it were.

But the time is coming, in fact is near at hand, when we shall have a Department of Health in our National Government, with a secretary who is a member of the President's cabinet. And I trust the North Carolina State Health Officers' Association will at this meeting pass a strong resolution indorsing this measure that is now pending before Congress. And when that bill, known as the Owens Bill, or some like measure, is passed, and not until then, will our Government begin to do public health work in an organized way, as it ought to have been doing these many years. Our National Government should have been leading in this matter, instead of holding aloof until it was veritably pushed into it by the enthusiasm of the people. Why, it is a matter of fact, gentlemen, that our great Government thought that the war with Spain over the island of Cuba was something great and wonderful. And it was, because, on account of that war, and while the army of occupation was still in control of the island, four members of our medical profession discovered the method of transmission of yellow fever. And that discovery is worth more to humanity than all the conquests of war since the foundation of the world. And, gentlemen, you are not inadvertent to the fact that the work incident to this great discovery was done on the side, so to speak, without the knowledge or consent of our Government. Such things will not obtain when we have a National Department of Health.

The enthusiasm for the cause of public health has at last reached the ear and the heart and the purse of our millionaire philanthropists. In the time of Jenner, a little more than a century ago, and for several decades thereafter, the physician was compelled to conduct all studies and experiments, notwithstanding they were for the benefit of all the people, in his own time and at his own expense. In European countries, if he were successful, and made some great discovery that would save millions and millions of lives, and millions and millions of money, the Government might vote him a goodly sum, and perhaps bestow upon him a bounty; but not so in the United States. And so it came to pass that little of this kind of study and research was done in this country until within the last few years, when our people became more wealthy, and individual men of wealth began to recognize the ability and worth of our own people, and to endow the medical colleges. A few years ago the great philanthropist and public benefactor, John D. Rockefeller, organized and provided for its perpetuity, an institution known as the "Rockefeller Institute for Original Research" and from which much good and several important and valuable discoveries have already emanated. Following this came a gift, from the same source, of one million dollars for the eradication of the hookworm disease, the fruits of which we are enjoying in North Carolina to-day, and will enjoy for all time to come. Contemporaneously with these came the establishment of the Phipps Institute in connection with the University of Pennsylvania for the study of tuberculosis. Another great philanthropy is the splendid work of Nathan Strauss in New York City in reducing the death rate among infants, and in making possible what is known as certified milk, with particular reference to infant feeding.

I might mention many more, and all of them made possible by the work of our noble profession, especially that part of it specifically interested in the cause of public health, and that too without reward or hope of reward, save the reward of a consciousness of duty faithfully performed.

But the great philanthropies that have been expended in the cause of public health in the last few years are but an earnest of what is to come, provided the energy and enthusiasm of our people in the cause of public health are directed along proper channels. And who is charged with giving this energy and enthusiasm proper direction? The

Health Officer. The Health Officer is captain of the hosts, and must lead them to victory or defeat. Need I say more to impress upon you the importance of this Association, and the importance of the Health Officer? It is high time we Health Officers were taking an inventory of ourselves, and thereby ascertaining whether or not we are fully competent for the task that is set before us. If not, we must either make ourselves competent or resign our office and put some one in command who is competent.

We cannot magnify too highly the Health Officer and his work. It is a great achievement to make two blades of grass grow where only one grew before. It is a great achievement to make an acre of ground produce 100 bushels of corn where it only produced ten before. But what good can it do you when you are dead? It is a great thing to link two oceans together by steel rails; but you won't care to ride on the train when you are dead. It is a great achievement to link two oceans together by the Panama Canal; but what will you care about it when you are dead? It is wise and proper that Congress should appropriate one hundred millions dollars for good roads, and that states and counties should use their convicts in building good roads, and that the counties, towns, and townships should issue bonds and use the proceeds in building good roads; but the roads won't be worth anything to you when you are dead. It is wise and proper that our Government should look well to the conservation of her natural resources, the conservation of her forests, the conservation of her water-powers, the conservation of her coal fields, the conservation of her soil; but these, while important, are insignificant when compared with the conservation of human life.

In the economics of a nation there is nothing so important as the conservation of human life. It has been well said by Senator Owens that "the conservation and efficiency of our people is a problem of the first magnitude, demanding immediate and intelligent attention." And by Sir Frederick Treves, that "health is the essential factor in productiveness, prosperity, and happiness, and hence in the advancement of civilization." And by Lord Beaconsfield, that "public health is the foundation on which reposes the happiness of a people and the power of a country." The care of the public health, then, is the first duty of a nation. And by Mr. A. H. Eller, Chairman of the State Democratic Executive Committee of this State, that "the lives and health of the people stand first among all the duties which an intelligent State owes to a loyal citizenship. Grander conceptions of human worth demand that preventable diseases be subdued as the common enemy of all."

If all these things be true—and they are true—then who would dare minimize the importance, the work, the responsibility of the Health Officer? What town council, what board of county commissioners would dare tie the hands of their Health Officer by refusing to make a sufficient appropriation to enable him to carry this message of life, health, happiness, and prosperity to all the people of his town and county? Who would dare suggest that a Health Officer do this most important work as a labor of love? Who would think for a moment that a matter of so great and far-reaching importance would occupy less than the entire time and energy of the best man that could be procured?

If this organization shall make better, more efficient, more energetic health officers in North Carolina; if it shall awaken an increased interest and enthuse a more intelligent activity into the teachers, members of boards of health, boards of commissioners, boards of education, town councils and other health workers in our State; if it shall thereby reduce the death rate and the incidence of disease in our State and thus increase the productivity, the happiness, and prosperity of our citizens, it will not have lived and wrought in vain. To that end let us ever strive.

EUGENICS AND CONSERVATION.*

Dr. Fletcher Reese Harris, Henderson, N. C.

In the words of Sir Francis Galton, "Eugenics is the study of the agencies under social control, that may improve or impair the racial qualities of future generations, either physically or mentally."

For centuries our leaders in thought have considered the possibility of improving the innate characteristics of the human race. This has been through a more or less haphazard way—rather speculatively, owing to a lack of data—but to-day, with the statistics at hand, it may be treated scientifically.

I shall endeavor to show that the race is deteriorating, and that the time is already approaching when we must take an inventory and "about face," or go down in the racial struggle, as so many nations have done before us.

We must not delude ourselves with the false belief that because we are Americans, Anglo-Saxons, therefore we are and will remain a great and dominant people. As scientific men it behooves us to study the facts as they are—not see them through some racial glamour, but, I repeat, see the facts as they are, and, having seen, let us take advantage of every known and knowable method of race improvement until we become a race of surpassing vigor.

The aim of Eugenics is the production of a more healthy, more vigorous humanity. Again, in the words of Galton, "The aim of Eugenics is to represent each class . . . by its best specimens. . . . To bring as many influences as can be reasonably employed to cause the useful classes in the community to contribute more than their present proportion to the next generation and to cause the useless, vicious classes to contribute to the next generation less than their present proportion." It is common knowledge that we can and do create new and better types of plants and animals.

The time is here when we may give an order to a specialist specifying that we would like to have a plant or an animal embodying certain characteristics, and, after due lapse of time, the order is filled, just as though we were dealing with a tailor for a suit of clothes.

Admitting that this is true, the question that concerns us is, whether this knowledge may be applied to the human race.

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*Read before the North Carolina Medical Society at Hendersonville, June 18, 1912.

In answering this problem, we will take some of the most important specific questions to which workers in Eugenics have obtained definite answers:

1st. Are the physical characteristics of man inherited, and, if so, with what intensity in the different degrees of relationship? To answer this question it is necessary to measure precisely in a large number of individuals of certain degrees of relationship a series of definite physical characteristics, and then to get an expression of the degree to which a given characteristic in sons, say, is like that characteristic in fathers.

The best expression for this likeness has been found to be a mathematical constant, known as the Coefficient of Correlation. To explain this Constant: It is of such character that if every son in a measured group were precisely like his father in respect to the characteristic measured, the Coefficient measuring the resemblance would take the value one. If, on the other hand, the group of sons were no more like their fathers than they were like any group of men in general, the Coefficient would take the value of zero. For degrees of resemblance between total absence of likeness and absolute identity, the Coefficient will take the appropriate value between zero and one.

To answer the question whether physical characteristics are inherited in man, Professor Pearson collected an extensive series of data.

The data included measurements of stature, and length of the forearm and span in about 1,000 families, for the following relations: Father, mother, adult sons, adult daughters. The general character of the results of the analysis of these is as follows:

Character.	Relatives.	Intensity of Resemblance as Measured by the Coefficient of Correlation.
Stature	Father and son	.51
Span	Father and son	.45
Forearm length	Father and son	.42
Stature	Mother and daughter	.51
Span	Mother and daughter	.45
Forearm length	Mother and daughter	.42

From these results there can be but one conclusion. It is that the characteristics measured are definitely inherited, and to a sensible degree. The resemblance between parent and offspring is on the average about one-half as close as complete identity.

The average of the intensities of parental resemblance in the above table is .47.

The average intensity of the resemblance between brothers, from a similar table, is .53—larger than the former.

This leads to one of the well-grounded conclusions of Eugenics' work—that the hereditary resemblance between brothers and sisters is, on the average, closer than that between parent and offspring.

In a similar way the hereditary resemblance between an individual and his remote ancestors, in respect to physical characteristics, has been measured.

Having settled the question that the physical characteristics of men are inherited, the next problem obviously is: Are mental and moral qualities likewise inherited, and, if so, with what degree of intensity? Without going into details, the general results may be stated as follows: The Coefficients measuring the resemblance between brothers and sisters, in respect to eight psychical characteristics studied, were found to take values substantially identical with those found for the Coefficients measuring the resemblance between the same individuals in regard to a series of physical characteristics. In other words, the evidence indicates that mental and moral qualities are inherited, and with about the same degree of intensity as physical characteristics.

Another investigator has shown from a study of Oxford class lists that the degree of resemblance between father and son and between adult brothers, in intellectual ability as measured by University Scholarship, is substantially the same as the resemblance in physical characteristics between such relatives.

Are specific diseases and pathological conditions generally inherited, and with what intensity? Workers in Eugenics find that some pathological conditions, at least, are inherited, and with about the same intensity as physical, mental, and moral characteristics are.

I shall not take your time, in this presence, to indicate these pathological conditions, but take it for granted that you know.

Having shown that human characteristics are inherited—both good and bad and also liability to disease—it is pertinent to know what are the existing conditions relative to the fertility of desirable as compared with undesirable classes. The results are shown by Professor Pearson in a lecture before Oxford University in a condensed table as follows:

FERTILITY IN PATHOLOGICAL STOCKS.

Class.	Number of Children per Family.
Deaf-mutes, England	6.2
Deaf-mutes, America	6.1
Tuberculous stock	5.7
Albinotic stock	5.9
Insane stock	6.0
Edinburgh degenerates	6.1
London mentally defective	7.0
Manchester mentally defective	6.3
Criminals	6.6

FERTILITY IN NORMAL STOCKS.

English middle class	6.4
English intellectual class	4.7
American graduates (Harvard)	2.0
English intellectuals	1.5

The ratio of prisoners to the total population in the United States has increased from 29 per 100,000 in 1850 to 125 per 100,000 in 1904.

In the United States the number of murders and homicides per million of the entire population has nearly trebled in the last fifteen years.

In the United States in 1880 there were 183 insane persons per 100,000, while in 1903 there were 225 insane persons per 100,000.

The Superintendent of the Ohio Institution for the Feeble-Minded wrote in 1902: "Unless preventive measures against the progressive increase of the defective classes are adopted, such a calamity as the gradual eclipse, slow decay, and final disintegration of our present form of society and government is not only possible, but probable."

The latest census reports for the United States show as follows: Insane and feeble-minded, blind, deaf, and deaf and dumb, paupers in institutions, prisoners, juvenile delinquents, etc., a rough total of nearly 3,000,000.

It is always the same story—rapid increase of the unfit, defective, insane, criminal; slow increase, even decrease, of the fit, normal, or gifted stock.

It is with such conditions in mind that Whetham writes: "Although this suppression of the best blood of the country is a new disease in modern Europe, it is an old story in the history of nations and has been the prelude to the ruin of states and the decline and fall of empires."

With this appalling condition obtaining in this land of ours, it is incumbent upon us as scientific men and intelligent citizens to pause and consider what measures we shall adopt to correct it. I suggest that the chief *positive* methods of race regeneration be educative rather than legislative. Give the facts the widest possible publicity in every available way.

In 1910 the Eugenics Record office was instituted at Cold Spring Harbor, Long Island, N. Y. The American Breeders' Association has appointed a committee and subcommittees under highly competent leaders for the collection of exact data of human heredity upon a large scale. We should encourage these institutions by sending pedigrees of families, both good and bad.

The scope of our census reports should be broadened as a means of securing data on human blood-lines and tracing the descent of defects.

We should educate the young for parenthood. There are many more positive methods that might be suggested, but I leave the responsibility on you to help suggest them.

Legislative and negative methods.—Segregation or *permanent care* of the feeble-minded under proper medical supervision.

Notification of venereal diseases.—Why should we be required to notify the public of smallpox—both a preventable and curable disease—and not notify, by legal enactment, syphilis, a disease that affects future generations?

An authority has tersely said, "If only one-half of 1 per cent of the thirty million dollars annually spent on hospitals, twenty millions on insane asylums, twenty millions for almshouses, thirteen millions on prisons, and five millions on the feeble-minded, deaf and blind, were spent on the study of the bad germ plasm that makes necessary the annual expenditure of nearly one hundred millions in the care of its produce, we might hope to learn just how it is being reproduced and the best way to diminish its further spread."

This is what I regard the crux of the situation. Stop the *sources,* instead of using all our means in alleviating the conditions.

Another suggestion is to obliterate the double standard by legal enactment.

Vasectomy with careful restrictions.—For the last four years (since March, 1907) the laws of Indiana have permitted the performance of the operation of Vasectomy upon "confirmed criminals, idiots, rapists, and imbeciles" after rigid scrutiny of all the mental and physical conditions of the individual case and upon the concurrent judgment of three competent and impartial persons. The title and significant parts of the text of this law are as follows:

"AN ACT

TO PREVENT PROCREATION OF CONFIRMED CRIMINALS, IDIOTS, IMBECILES AND RAPISTS; PROVIDING THAT SUPERINTENDENTS OR BOARDS OF MANAGERS OF INSTITUTIONS WHERE SUCH PERSONS ARE CONFINED SHALL HAVE THE AUTHORITY AND ARE EMPOWERED TO APPOINT A COMMITTEE OF EXPERTS, CONSISTING OF TWO PHYSICIANS, TO EXAMINE INTO THE MENTAL CONDITION OF SUCH INMATES.

Whereas, heredity plays a most important part in the transmission of crime, idiocy, and imbecility: therefore,

Be it enacted by the General Assembly of the State of Indiana, That on and after the passage of this act it shall be compulsory for each and every institution in the State, intrusted with the care of confirmed criminals, idiots, rapists, and imbeciles, to appoint upon its staff, in addition to the regular institutional physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable, and there is no probability of the improvement of the mental and physical condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective.

But this operation shall not be performed except in cases that have been pronounced unimprovable: *Provided,* that in no case shall the consultation fee be more than three dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institution."

In Indiana nearly a thousand persons have been successfully treated, many upon their own request. Laws similar to this have been passed in Oregon, Connecticut, and other states.

The Connecticut statute, enacted in August, 1909, is as follows:

"AN ACT

CONCERNING OPERATIONS FOR THE PREVENTION OF PROCREATION.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

SECTION 1. The directors of the State prison and the superintendents of State hospitals for the insane at Middletown and Norwich are hereby authorized and directed to appoint for each of said institutions, respectively, two skilled surgeons, who, in conjunction with the physician or surgeon in charge at each of said institutions, shall examine such persons as are reported to them by the warden, superintendent, or the physician or surgeon in charge to be persons by whom procreation would be inadvisable.

Such board shall examine the physical and mental condition of such persons, and their record and family history so far as the same can be ascertained, and, if in the judgment of a majority of said board procreation by any such would produce children with an inherited tendency to crime, insanity, feeblemindedness, idiocy, or imbecility, and there is no probability that the condition of any such person so examined will improve to such an extent as to render procreation by such person advisable, or if the physical and mental condition of any such person will be substantially improved thereby, then the said board shall appoint one of its members to perform the operation of vasectomy or oöphorectomy, as the case may be, upon such person. Such operation shall be performed in a safe and humane manner, and the board making such examination, and the surgeon performing such operation, shall receive from the State such compensation for services rendered as the warden of the State prison or the superintendent of either of the State hospitals shall deem reasonable.

Sec. 2. Except as authorized by this act, every person who shall perform, encourage, assist in, or otherwise promote the performance of either of the operations described in section 1 of this act, for the purpose of destroying the power to procreate the human species, or any person who shall knowingly permit either of such operations to be performed upon such person, unless the same be a medical necessity, shall be fined not more than $1,000 or imprisoned in the State prison not more than five years, or both."

Some one has so well said, "Could such a law be enforced in the whole United States, less than four generations would eliminate nine-tenths of the crime, insanity, and sickness of the present generation in our land. Asylums, prisons, and hospitals would decrease, and the problems of the unemployed, the indigent old, and the hopelessly degenerate would cease to trouble civilization."

Many countries, from Servia to Argentine Republic, have statutes forbidding the marriage of the insane, idiots, deaf and dumb, certain classes of criminals and persons affected with certain contagious diseases.

"The first and main point is to secure the general intellectual acceptance of Eugenics as a hopeful and most important study. Then let its principles work into the heart of the Nation, who will gradually give practical effect to them in ways that we may not wholly foresee."

And Whetham adds: "Hitherto the development of our race has been unconscious, and we have been allowed no responsibility for its right course. Now, in the fulness of time . . . we are treated as children no more, and the conscious fashioning of the human race is given into our hands. Let us put away childish things, stand up with open eyes, and face our responsibilities."

I intended to refer to prospective immigrants, but I will spare you.

We have spent our millions upon the conditions of life; why not pursue the rational course and spend something on life itself? I have not a word to say against anything and everything to ameliorate the conditions of weak and suffering humanity, but I do plead that we use the knowledge we have and reproduce the best from the best, and, in so far as we can, curtail the reproduction of the criminal, the insane, the idiot, the imbecile and all degenerate classes. And may it be said of us, "And they that shall be of Thee shall build the old waste places; Thou shalt raise up the foundations of many generations; and Thou shalt be called the Repairer of the breach, the Restorer of paths to dwell in."

For these ends may Science and Common Sense join hands over the cradle of the unborn!

THIS BULLETIN WILL BE SENT FREE TO ANY CITIZEN OF THE STATE UPON REQUEST

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You can doubtless render a great service to some of your neighbors or friends by requesting this office to send them copies of such special bulletins as would probably be of interest or benefit to them. Request bulletins on tuberculosis, typhoid, etc., sent to homes in which there are cases of these diseases. It may mean the saving of much suffering and even life itself. *Can't you do it now?*

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EDITORIAL

TWO CARDINAL PRINCIPLES IN STATE HEALTH WORK.

All functions of intelligent democratic government must be directed by the people. The difficulty in the way of the people doing this is that the mechanism of government is complex and not easily mastered. When, therefore, any one interested in the development or extension of any particular phase of government wishes certain policies adopted and enacted into law, it devolves upon such a one to put before the people his proposals stripped of all confusing details and with the simple underlying principles laid bare, so that he appeals easily to both the public mind and conscience.

Fortunately, our State health policy can be reduced to only two essential principles, so simple, and, we believe, so reasonable that the great majority of our people should not be unfamiliar, on account of either time or mental effort, with the methods by which we propose to bring about better health conditions in North Carolina. In fact, the remedy is so simple that we hesitate to name it, fearing that our reader, Naaman-like, will decline us a further hearing because of the very simplicity of our proposal. But, the reader should remember that Naaman, when he put the remedy to test, was cured of his disease, and remember, too, that one of the remarkable things about the prevention of most of our preventable diseases is the simplicity of the means of prevention, and then, in the name of good citizenship, hear us briefly.

The *two* things that will do more than everything else combined to rid the State of preventable disease and unnecessary death are: *First,* a thoroughly enforced vital statistics law, a law requiring the registration of all births and deaths; *second,* unrestricted publicity—unrestricted by either a disapproving public opinion or a deficient appropriation.

As that last word, appropriation, has acquired such a repulsive meaning to many, a slight digression may here be pardoned to say that the cost of both of the proposed remedies is small. Public health work is one of great things that may be done cheaply. Twelve thousand dollars additional annual appropriation, that is, altogether thirty-eight thousand dollars annual State health appropriation, will buy the medicine prescribed above.

Naturally, those who have to pay for the remedies have a right to inquire how such a simple prescription will act upon the vital organs of the body politic, the counties and municipalities of the State, to bring about any great improvement in the vitality of our people. The physiological action, if the reader will permit a technical term, of vital statistics combined with publicity will be as follows:

Our first remedy, the vital statistics law, will require that every death occurring in the State shall be registered on a standard form certificate on which is given the color, sex, age, diseases causing death, and several other minor items about the decedent, with the State

Board of Health. At the end of each year, these facts having been tabulated, the office will be in possession of the death rates, that is, the number of deaths *per* 1,000 of the population from all causes and from special diseases like tuberculosis, typhoid fever, infantile diarrhea, etc., for every one of the hundred counties and for the principal towns and cities of the State.

At this juncture the second remedy, publicity, comes into play and completes the action begun by the first remedy, vital statistics. Through a fifty-thousand edition of our State Board of Health Bulletin, the general death rate and the special disease death rates of the more important diseases for all the counties, cities, and towns of the State will be published in such a form that even those who cannot read will know what standard or average health is, and exactly how every county, city, and town in the State compare with the standard. For example, that Bulletin will carry on its front page the standard of health in the United States, that is, the annual number of deaths *per* 1,000 of the population from all causes and from certain diseases, as tuberculosis, typhoid fever, diarrhea, diseases of children, the contagions, etc., that occurs in the *average* county and city of the United States. The State's average general and special death rates will follow the National standard of health or National death rates, so that the different counties and towns of this State may be compared with one another—that is, a state standard established. Then will follow in the order of their general death rates from the lowest death rate, that is, the healthiest, to the highest death rate, that is, the unhealthiest, a tabulation of the counties of the State; next will follow another tabulation of counties in the order of their death rate from tuberculosis; then another tabulation showing comparative death rates from typhoid fever, etc. The same comparative tabulation in the order of their death rates of the cities and towns in the State will follow the county tabulations. Then, in order that this vital information may be easily assimilated by all classes, literate and illiterate, the death rates, general and special, will be given diagrammatically in the form of tombstones, the relative sizes of which will indicate the difference in death rates of the counties the names of which appear on the tombstones.

The healthiest and unhealthiest county and town in the State will be a matter of general knowledge. The public will know certain counties where the chance of dying from tuberculosis is only one-third or one-half as great as in certain other counties; the liabilities of deaths from other preventable diseases in the different counties and towns will also be known.

What effect would such facts have on the public welfare? I hear some one who loves darkness rather than light say it would simply be disastrous. Well, let us see. In the first place, it will certainly not hurt the county and town that is the healthiest or one of the healthiest counties or towns in the State to have this fact circulated far and wide. In that fact, based as it would be upon exact figures, such a county or town will have one of its best advertisements.

But how about the unhealthiest county, or one of the unhealthiest counties or towns of the State? One meets a friend; he recognizes on his face a cancer, just beginning, still in the operable or curable stage; it will greatly distress the friend, for a while at least, to be told of his condition, and informed that a surgical operation is necessary to save his life. Will he tell his friend or will he let him die? If a county of, say, 40,000 population has a death rate of 30 *per* thousand, instead of the average death rate of 15 *per* thousand, thereby having 1,200 instead of 600 deaths a year that the law of averages will excuse them for losing, does any one believe that the people of that county, who are paying the unnecessary price of something like 600 deaths each year and a coincident amount of sickness for their ignorance, should not be given the truth? Would they not, if they knew the exact facts regarding the situation, adopt those measures known to have reduced high death rates like theirs when applied in other places and, thereby, save hundreds of lives that would otherwise be lost? Could such a county, with other near-by counties having practically the same climate and soil conditions and the same class of people, except that they are wide-awake to the opportunities of public sanitation, and with much lower death rates, be so indifferent to the problem of life and death as to be unmoved by such a situation? If so, there is a more deterrent reason than high death rates to make one hesitate to make his home among such people. Where indolence or ignorance is so profound that civilized methods of self-preservation are unused or unknown, and when the community pride, patriotism, is so dead as not to be awakened and stimulated to effort by the publication of death rates from fifty to one hundred *per* cent higher than those of the average community, there is little to invite the prospective investor or home-maker.

The truth (the facts, vital statistics), first, and then, *applied* truth (the combination of vital statistics and publicity), will have the curative effect upon the disease spots of this State that strong X-rays have on certain forms of skin cancer, or concentrated sunlight has on certain skin affections. "Ye shall know the truth, and the truth shall make you free."

Very few counties or towns will be contented to be known as one of the unhealthiest counties or towns in the State. They will get busy to reduce their death rate. Naturally, the first thing will be to put some responsible person in charge of the work, that is, to elect a health officer. And the county commissioners will inform that official that it is not so much the *treatment* of a few chronic diseases in the county jail, almshouse, or chain-gang that they are interested in, but that they are hiring him to *prevent* disease and, thereby, *prevent* death and, thereby, lower the county's death rate. They want tangible results. The county commissioners will pay less attention to the *methods* used by their health officer and more to the *results* of his work as indicated by alterations in their death rates. Moreover, if the health officer does not perceptibly lower the death rates within a reasonable time, two or three years, it will be perfectly apparent to the commissioners and the people that they are not getting results; that they are not only wasting their money, but, by entrusting life-saving work to one who is not saving life, they are losing what money cannot buy. They will then say to the nominal health officer: "Here, you have been preaching the possibilities of preventive medicine or public health and have given us all to understand that health work meant the prevention of disease. Now, if you prevent disease, does that not mean that deaths which result from disease will also be prevented, and a lowering of our death rate necessarily follow? Is not the death rate the ultimate test of the efficiency of a health officer? Should people continue to employ a health officer who has nothing to show for his stewardship in a reduction of his death rates?" The answer to these questions is all too evident.

So it will come about that the inefficient health officers will be weeded out, health work be established on a basis of pure merit, divorced from politics, and that great God-made law that insures the survival of the fittest applied by the people to the selection, retention in office, and compensation of health officers.

At the end of each registration year the records of the county and municipal health officers and a description of their methods of work will be published in the BULLETIN. Those who are not so successful can benefit by the experience of the most successful, and a natural spirit of rivalry between the one hundred county health officers will develop, and, in the race to excel in the great life-saving contest, the health of our State will advance by leaps and bounds.

Only two things are necessary to do this. One, publicity, we have. Will the General Assembly of 1913 see that we get the other essential, a state-wide vital statistics law? Will you, reader, help just a little by seeing that your representatives in that Assembly understand this need? Do not leave this to somebody else; that fellow can never be depended on.

WEALTH DISTRIBUTION AND PUBLIC HEALTH.

To one whose attention has been concentrated on the make-up and workings of the human body, and who later becomes interested in the body politic or civic life, there are many lessons learned from the former that are applicable to the latter.

For example, both the individual body and body politic are made up of structural units, each of which is endowed with all the essential functions of life. The unit of structure in the individual body is microscopic in size and is called a cell; the unit of structure in the body politic is much larger and is called a citizen. Both the cell and citizen, to produce energy, to live, must take nourishment. The cell absorbs its food or nourishment from the blood stream that bathes it—the circulation is the food supply of the little cells, the citizens of the individual body. What the circulation is to the cells of the body, the wealth of the country is to the citizens of the body politic. Circulation and currency are, indeed, kindred terms: the one referring to the distribution of food to the cells of the individual body, the other to the distribution of the potential food supply of the citizens of the body politic. "The blood is the life thereof."

When the blood is unevenly distributed in our bodies, a diseased condition is evident, and, if the unequal distribution becomes marked, life is in grave danger. So with the distribution of our Natonal wealth.

When the currency of the country, the blood supply of civic life, stagnates in a few centers of wealth, is withdrawn from the circulation, there naturally follows a sparsity of food in other parts; there is, there must be, an anemia (deficient circulation) in parts of the body politic to compensate the congestion in other localities. Then helpless infancy cries for the food that others withhold simply for the pleasure of withholding; mothers put into art what God intended to go into the masterpieces of nature; children are made to yield their inalienable right to a happy, care-free, vigorous childhood, and to become prematurely conscripts in the army of toilers. This was the vision of the poet when he sang:

"Ill fares the land, to hast'ning ills a prey,
When wealth accumulates and men decay."

Recognizing this vital relation of economic conditions to our national vigor, the writer some months ago made a faithful effort to obtain some light on this important phase of the health problem. The most important fact learned in the investigation was that there was nothing *known* concerning so fundamental a problem of intelligent and efficient government as the distribution of our national wealth.

It was a very easy matter to find the *per capita* wealth of the country. All that was necessary to do this was to take the total wealth and divide it by the total population as given in the Statistical Abstract of the United States. But *per capita* wealth and the distribution of wealth are two entirely different things. The *per capita* wealth remains the same whether all the wealth in the country is owned by one person or by one hundred million persons, and is, therefore, no index to the economic welfare of American citizens. On the other hand, as we have above stated, a fairly uniform distribution of our national wealth is as vital to national vigor as a proper distribution of blood in the body is to individual vitality.

We were especially anxious to ascertain the tendency of our national wealth during the last twenty-five or fifty years, whether it was toward more general distribution or greater concentration; therefore, we wanted to know the *per cent* of our population for different decennial periods during the last twenty or fifty years who were rated over $100,000,000, over $50,000,000, over $25,000,000, over $10,000,000, over $1,000,000, over $500,000, over $100,000, over $50,000, etc. That the tendency of our national wealth is toward abnormal congestion is the contention of two of the three strongest of our political parties, and the third, while not making use of this fact as campaign thunder, passively admits the fact. But while much is charged, little is known. We sought for information on this matter from the following authorities on government and political economy: Irving Fisher, Professor of Political Economy, Yale University; Charles Lee Raper, Professor of Political Economy, University of North Carolina; E. W. Sikes, Professor of Political Economy, Wake Forest College; United States Senator F. M. Simmons and United States Congressman E. Y. Webb; Mr. Holmes, Statistician, Bureau of Statistics, Department of Agriculture, Washington; and the *Manufacturers' Record*. And we sought in vain. They all either replied, saying they could not supply the information, or referred us to some one who did write that there was nothing *known* concerning the distribution of our national wealth.

The surprise is that those who manage our Government and who, at least for campaign purposes, seem to appreciate the profound significance of such knowledge, have failed to provide any means for securing it. Such knowledge would furnish one of the best indices to national advancement or national retrogression; such knowledge is almost essential in any attempt to devise an equitable system of taxation. We are told that in France such knowledge of the distribution of the Republic's property and wealth is at hand; that the French Government knows exactly in placing a tax just how many of its citizens will feel it, and how well they can bear it.

The figures on the subject of wealth distribution that are probably accepted as the most authoritative, in lieu of exact information, by the largest number of students of economic conditions are those of Spahr. His figures are that 1 per cent of American citizens are rich, 11 per cent are comfortable, middle-class, and own their homes; 50 per cent do not own their homes, and 38 per cent are poor. Furthermore, it is estimated, by authorities whose books are extensively used as text-books, that there are 3,000,000 paupers or legal dependents on public charity and over 10,000,000 others below the poverty line, that is, those whose physical efficiency is below normal on account of deficient food or clothing, in the United States. Certainly, such economic conditions as these stand in relation to disease as cause and effect.

THE RESURRECTION OF A DEAD INSTINCT.

It is a fact that, back in a remote period of the world's history, there was a time when mere muscular power was the dominant force in nature. But, as the world developed, and man, under the moulding forces of divine laws (frequenty spoken of as natural laws), took on more and more the image of his Maker, as a semi-consciousness of his kinship with the general order of nature was felt and as his sympathies developed, a fundamental principle of civilized law, to wit, that might does not make right, was evolved. In the natural order of things this principle, more instinct than reason, at first referred to the might of muscle. Strange as it may seem, this antiquated interpretation of the principle still holds with many people. With them, it is a crime if one, through the inheritance of great muscular vigor, should compel a weaker man, a woman, or a child to surrender property, health, or life; on the other hand, it is no crime if a man or combination of men, through the inheritance of greater mental vigor, shall compel others through indirect financial and legislative influences to bear excessive burdens and encounter unnecessary dangers of accident and disease.

In our modern world, mind and not muscle is the dominant force. The old principle, that might does not make right, must be refitted to the new order, and include the might of brain as well as the might of brawn. And so as man travels onward and upward from the lowly worm of the dust that he was born to his present height but a little lower than the angels, and upward farther yet, we may look with the eye of faith to that evolutionary destiny where in reality the government will be "not by might nor by power, but by my Spirit."

THE SOCIAL WELFARE INTERESTS OF THE STATE ORGANIZE THE NORTH CAROLINA CONFERENCE FOR SOCIAL SERVICE.

With only this explanation, that those whose names are subscribed to the following letter were not entirely responsible for the idea of organizing the social welfare workers of North Carolina, it may be said that the initial step toward uniting, correlating, and strengthening the social service forces of the State was taken in the following letter:

RALEIGH, N. C., September 6, 1912.

MY DEAR SIR:—The recent meeting of the Southern Sociological Congress in Nashville, Tennessee, suggests the advantages of a state sociological organization to consider, in a broad way, the social needs of our people, the natural correlation of these needs, and the best methods of coördinated activities to meet such needs. If Herbert Spencer's conception of society as a social organism is correct, and if it is essential in the development of a strong and healthy organism that the various organs be symmetrically formed and their activities properly coördinated, then there is a real need for such an organization as we suggest.

Our last statement is true for the reason that, at present, many fruitful fields of social service in North Carolina are entirely undeveloped, and, while in other lines perceptible progress is noted, there is almost an entire absence of coördination between the several social organizations now at work. The forces of progress are fighting in single battalions with divided strength and scattered leadership, not as one united army.

We believe that you share with us the feeling that, by coming together to study the several phases of social service that have a single ultimate end—the general improvement of the citizenship of our State—and by agreeing to combine forces and to coöperate for the attainment of certain fundamental and common civic needs, we shall all render far more effectual service. To this end we are endeavoring to bring together on the 17th of September in the Chamber of Commerce of the city of Raleigh the following parties as representing the different subdivisions of social service appearing opposite their names for the purpose of arranging a State Sociological Association to hold its first meeting some time in November or early December:

BISHOP ROBERT STRANGE: *Church and Social Service.*
HON. J. Y. JOYNER: *Illiteracy.*
MR. JAMES P. COOK: *Reformation.*
REV. M. L. KESTLER: *Orphanages.*
HON. T. W. BICKETT: *Criminal Procedure.*
DR. L. B. MCBRAYER: *Feeble-mindedness.*
MR. CLARENCE POE: *Improvement of Country Life.*
MR. W. H. SWIFT: *Child Labor.*
MISS DAISY DENSON: *Prisons.*
MR. R. F. BEASLEY: *Liquor Problem.*
MR. GILBERT STEPHENSON: *Race Question.*
DR. W. S. RANKIN: *Public Health.*

We have selected you because of your ability to help make this undertaking a success and because we believe this proposition will appeal to you. Please write Mr. Poe at once whether we may expect you.

With the earnest desire that you meet with us, we are

Yours sincerely.

(Signed) T. W. BICKETT.
CLARENCE POE.
DAISY DENSON.
J. Y. JOYNER.
W. S. RANKIN.

In accordance with the proposal of this letter, seven of the twelve invited to the initial conference met in the Chamber of Commerce on September 17th. The other five wrote, stating that while it was impossible for them to attend, they were deeply interested in the work proposed and would gladly assist in building up an effective organization.

The result of this meeting and subsequent meetings of subcommittees is that preparations are now under way for the first annual meeting of the "North Carolina Conference for Social Service" to be held in Raleigh in January.

Although only one brief statement has appeared in the newspapers regarding the movement, letters have already been received from numbers of people interested, and the Conference has every prospect of becoming a genuine success. Every North Carolinian interested in its purposes will be asked to attend the January meeting. In order to get a large membership, the regular annual fee will be only $1, but it is hoped that a considerable number of North Carolinians will also become sustaining members and pay $5 a year.

The spirit of the movers in this enterprise and the spirit which it is hoped will distinguish all the activities of the Conference and attract to it at least a full thousand public-spirited North Carolinians, is very clearly set forth in the following official

STATEMENT OF PURPOSES.

"*Aim.*—The Conference for Social Service concerns itself with human life and the conditions that affect human life in North Carolina. To have the population of the State the best equipped of any in the Union, and to insure here and now an environment of physical, mental, and moral healthfulness that will prevent human waste and make for the fullest development of every individual within our borders—this is its aim. And in working towards this result, it will seek to unite all the now scattered forces of social service upon this threefold program:

"(1) *Investigating Conditions.*—It will study the social, civic, and economic conditions in our State, especially conditions that injuriously affect child life, or that tend to perpetuate preventable ignorance, disease, degeneracy, or poverty among our people and so handicap them in the fierce twentieth-century struggle for supremacy. To this end, the Conference will (1) provide committees of thoughtful citizens to study each problem in a spirit at once of human sympathy and scientific accuracy, and will (2) arrange for annual conferences to bring together all the State's citizenship, both men and women, interested in the purposes this organization has at heart.

"(2) *Awakening the People.*—Through its annual meetings, its addresses and platforms, its public documents, and the letters, addresses, and private activities of its members, it will seek to interest the people of the entire Commonwealth in its program and its policies.

"(3) *Securing the Remedies.*—Through committees and otherwise, it will endeavor to influence organized bodies of citizens, religious denominations, public officials, and State legislatures in behalf of such policies as its investigations show that conditions demand."

On this statement of its purposes, The North Carolina Conference for Social Service invites the coöperation of all men and women in the State, interested in its objects.

PLAN OF ORGANIZATION.

First. That each of the twelve parties invited to the initial conference shall serve as chairman of a committee representing the special phase of social service appearing oposite his or her name in the letter under date of September 6th.

Second. That each chairman shall nominate at least twenty persons for membership on his or her committee and send a list of their names to Dr. W. S. Rankin, Secretary of the Central Committee on Organization, Raleigh, N. C., not later than October 19, 1912, in order that the Central Committee may correct possible duplicate committee nominations, and return a list of twelve names whom the chairman shall ask to become members of his or her committee.

Third. That any chairman whose previously arranged duties and engagements will prevent his or her giving the necessary time to the work of his or her committee to insure a good attendance of the social interest he or she represents at the January meeting, shall appoint a vice chairman who shall assist the chairman in the work of the committee.

Fourth. That the service requested of members of the committee shall be attendance upon the first meeting of the Conference, and responsibility for the attendance of at least one other person at the meeting in January.

Fifth. That each chairman or vice chairman in sending in the nominations for his committee give the Central Committee the advantage of his or her advice with respect to the amount of time to be allotted to the program and as to the subjects that seem most deserving of consideration by the Conference.

ANOTHER SYMPTOM OF DISEASE OF THE BODY POLITIC: RACE AMALGAMATION.

We publish below a statement from the United States Bureau of the Census to the newspapers, which has a serious message, especially for the South. Should the present rate of race amalgamation continue, it will not be many years before this section of the Union will have to stop boasting of the purity of its Anglo-Saxon blood. We call especial attention to the comparative per cent of mulattoes for the years 1870, 1890, and 1910 in continental United States and in North Carolina respectively. The entire table is worthy of the serious attention of every one interested in racial welfare. The statement from the Census authorities is as follows:

PROPORTION OF MULATTOES IN THE NEGRO POPULATION OF THE UNITED STATES.

(Preliminary Thirteenth Census Statistics Issued by the Census Bureau.)

WASHINGTON, D. C., August 27, 1912.—A preliminary statement showing by states and geographic divisions the number and proportion of mulattoes among the negroes enumerated at the Thirteenth Decennial Census of the United States, taken as of April 15, 1910, was issued to-day by Director Durand of the Bureau of the Census, Department of Commerce and Labor. The statistics were prepared under the direction of William C. Hunt, chief statistician for population in the Bureau of the Census, and are subject to revision. The statement gives comparative figures for 1870 and 1890, no data being available for 1880 or 1900.

The term "mulatto," as used in the census of 1910, includes all persons, not full-blooded negroes, who have some proportion or perceptible trace of negro blood. The Bureau of the Census does not regard the returns as being beyond question, since the classification of negroes as full-bloods or mulattoes was necessarily to a considerable degree dependent upon the personal opinion and conscientiousness of the enumerators. The results, however, are believed to approximate the facts for the country as a whole and for large aggregates.

In 1910 there were in continental United States as a whole, 9,827,763 negroes, of whom 2,050,686, or 20.9 per cent, were reported as mulattoes. In 1890 there were 1,132,060 mulattoes reported, or 15.2 per cent of all the negroes, and in 1870 a total of 584,049, or 12 per cent. Thus the figures, taken at their face value, show that about one-fifth of all the negroes in 1910 had some admixture of white blood, as against about one-eighth in 1870. It may be noted, however, that an increase in the mulatto element does not necessarily imply increasing intermixture with the whites, since the children born of marriage between blacks and mulattoes would be mulattoes, according to the census definition.

The percentage of mulattoes reported varies widely in different states and different sections of the country. It was to be expected that the percentage would be relatively high in those sections where the negro population is small as compared with the total population, and would be higher in the North than in the South. In general, the results are in agreement with this presumption. In New England and in the East North Central and Pacific divisions about one-third of the negro population were reported as mulattoes, while in each of the three southern divisions the proportion is only about one-fifth. In the Middle Atlantic division for some reason the percentage is not higher than it is in the southern divisions. This may possibly be due to the rapid growth of negro population in that division through immigration from the South.

Geographic Divisions.	Per Cent Mulatto.		
	1910.	1890.	1870.
CONTINENTAL UNITED STATES	20.9	15.2	12.0
New England	33.4	32.7	28.6
Middle Atlantic	19.6	21.4	14.9
East North Central	33.2	37.2	29.2
West North Central	28.7	25.3	16.0
South Atlantic	20.8	13.4	10.4
East South Central	19.1	13.6	11.1
West South Central	20.1	14.5	13.1
Mountain	28.6	35.7	30.4
Pacific	34.7	42.3	37.3

Division and State.	Per Cent Mulatto.		
	1910.	1890.	1870.
New England:			
Maine	45.9	57.4	36.9
New Hampshire	36.9	59.6	24.8
Vermont	26.9	44.4	26.7
Massachusetts	36.7	36.3	30.6
Rhode Island	33.4	27.0	23.3
Connecticut	24.7	25.0	27.7
Middle Atlantic:			
New York	22.8	21.7	10.7
New Jersey	15.8	15.1	11.6
Pennsylvania	19.2	23.9	19.7
East North Central:			
Ohio	35.2	42.5	28.2
Indiana	24.1	30.2	28.6
Illinois	33.8	29.3	25.5
Michigan	47.0	53.8	45.7
Wisconsin	39.4	58.8	24.4
West North Central:			
Minnesota	36.9	46.2	32.3
Iowa	24.3	29.8	19.0
Missouri	28.4	23.6	15.0
North Dakota	25.4	59.0	24.5
South Dakota	36.2	42.7	
Nebraska	27.1	31.7	6.5
Kansas	29.9	26.5	22.3
South Atlantic:			
Delaware	11.9	12.5	9.8
Maryland	18.6	15.9	13.6
District of Columbia	34.9	26.2	18.5
Virginia	33.2	19.3	14.1
West Virginia	32.5	28.6	24.1
NORTH CAROLINA	20.7	13.8	9.6
South Carolina	16.1	9.7	6.7
Georgia	17.3	9.9	7.9
Florida	16.0	11.9	12.4

Division and State.	Per Cent Mulatto.		
	1910.	1890.	1870.
East South Central:			
Kentucky	25.2	19.4	20.1
Tennessee	25.1	17.3	9.4
Alabama	16.7	11.4	8.8
Mississippi	16.9	11.5	10.2
West South Central:			
Arkansas	18.4	12.8	10.1
Louisiana	21.4	16.3	15.5
Oklahoma	28.6	17.5	----
Texas	18.1	13.5	11.0
Mountain:			
Montana	33.3	27.1	15.1
Idaho	34.7	50.2	----
Wyoming	13.1	27.2	47.5
Colorado	31.8	34.7	40.4
New Mexico	27.0	50.4	32.6
Arizona	22.3	31.3	----
Utah	25.3	35.5	28.0
Nevada	37.0	42.1	18.8
Pacific:			
Washington	30.4	34.8	72.9
Oregon	29.1	53.0	25.1
California	36.3	42.2	36.5

SANITARY PROGRESS ON THE STATE FARM.

The sanitary evolution that has taken place within the last three years on the State Farm is indexed in the changes for sanitary sewage disposal; during the last three years the open fly-inviting privy has been replaced by the sanitary or fly-proof privy, and during the last year water-closets have taken the place of the sanitary privy. Last year running water was installed in the camps on the farm and the prisoners were required to bathe regularly at least once a week during the cold months and twice a week during the warm months. Only shower baths are used. The food of the prisoners is sufficient in quantity and of fair quality, probably much better than the average prisoner is accustomed to in his home. The sleeping quarters are screened against flies and mosquitoes and no vermin can be found. The regularity of the hours for work and sleep are favorable to the hygienic conditions of the prison life; the prisoners get approximately eight hours sleep, being required to retire about 9 p. m. and rise at 5 a. m.

There is, however, one much needed improvement which would practically make the conditions of life at the farm entirely satisfactory. At present the prisoners have only about 350 cubic feet of air space in their sleeping quarters. The minimum requirement of air space *per capita* is 600 cubic feet. Now, in the summer, with doors and windows wide open, the frequent changes of the air probably give sufficient ventilation; but in the winter, with doors and windows closed to keep out the cold, ventilation must necessarily be bad. However, we are encouraged to believe that the Board of Directors of the State Penitentiary are seriously contemplating enlarging the sleeping quarters of the prisoners at an early date. When this is done the present board of directors will certainly have an enviable record for sanitary improvements made in the prison life during their administration.

The penitentiary authorities employ a resident physician to look after the physical welfare of the prisoners. Dr. F. M. Register, who holds that position, is deeply interested in the physical welfare of the prisoners, and as a result of his careful work in preventing diseases among the prisoners there is but a small demand for the practice of curative methods.

Finally, considering the large percentage of maimed prisoners at the farm, those with only one leg, one arm, or one eye, or other permanent injuries, and those who have been addicted to bad habits before going to prison—in short, the general relation existing between diseases and crime—the death rate at the farm is very low.

REGISTER YOUR BABY'S BIRTH.

When Registering Your Fine-blooded Horse, Cow, Dog, or Chicken, Don't Forget the Baby.

Of course, we have gotten along without birth registration; we also got along without railroads, telephones, rural deliveries, and automobiles; but we must stay somewhere within earshot of the forces of progress.

It is true that our natural resources are so great and the opportunity to develop them so luring that we have too little time to consider the many things that should be done for our children—those to whom all the natural resources and the energy that we put into their development ultimately goes. So it comes about that we register our thoroughbred horse, hog, or dog, and neglect to register the births of our children.

The importance of birth registration is well shown in the following scenario which we reproduce through the courtesy of the Chicago Health Department. The film, which is copyrighted by the Essanay Film Manufacturing Company, will probably be shown in the moving-picture shows in this State, and we commend it to the attention of North Carolinians as teaching a most important duty, which as parents and as a State we owe our children.

TITLE: "THE ERROR OF OMISSION."

Scene I.—Living-room adjoining bedroom. Husband anxiously awaiting word from within. Doctor enters from bedroom and smilingly advises father "It's a boy." Husband enters bedroom and returning finds doctor signing birth certificate ("I. M. Rush, M.D."). Doctor indicates he is too busy to attend to recording birth certificate, and asks father to do it. Doctor leaves.

Father stands gazing disinterestedly at birth certificate and throws it aside as servant enters with messenger carrying blooded bull-pup. The accompanying note explains that the pup is a gift from a friend and that it should be recorded at the dog registry office at once. Husband delightedly takes pup and rushes out to dog registry office.

Scene 2.—Dog registry office. Sports and society women in line awaiting turn to register their pet dogs. Enter our young father with his bull-pup. As he is making out the dog registry papers he meets couple of male acquaintances. They sign the papers as witnesses, after which certificate is recorded.

Scene 3.—Birth registry office. General air of nothing doing, although sign on wall says "Law requires registration of births within twenty-four hours." Clerks idly chatting and yawning. Enter young father and his two male friends. Searches pocket for baby's birth certificate and, failing to find it, remarks: "Oh, never mind; some other time will do."

Scene 4.—Same room as in Scene 1. Enter father with his bull-pup and two male friends. Nurse brings baby in; friends admire; attention is called to birthmark on baby's neck. Nurse and baby retire. Father and friends drink to baby's health, and friends then leave. Husband hands servant the bull-pup with instructions to be very careful with it. He then sits down, lights cigar, sees birth certificate on table, picks it up, yawns as he reads it, gives evidence of his disapproval of such "official nonsense," tears the certificate up and assigns to wastebasket. He now remembers the dog certificate, which he takes out of his pocket and examines with evident pleasure. Carefully folding it, he writes on back: "Became father of a fine, bouncing boy on this date, also"; then files it away with other valuable papers.

A CONTRAST IN BIRTH REGISTRATION

SCENES FROM "THE ERROR OF OMISSION"

Copyright by Essanay Film Mfg. Co.

DOG REGISTRY OFFICE BABY REGISTRY OFFICE

Speaking of dogs and babies—Many are registered, but few are babies.

SIX YEARS LATER.

THE SCHOOL AGE.

Scene 5.—School principal's office. The child's first day at school. Enter servant with our baby, "Tommy." Principal questions servant, who cannot give proper information. Principal sends servant and child home, with note:

> *To Parents:*—All children must present a properly registered birth certificate on seeking admission to school. Kindly observe this requirement before again sending your child to this school.
>
> (Signed) .... Principal.

Scene 6.—Room in parents' home. Enter servant with child; hands principal's note to parents. Father indignantly takes child back to school.

Scene 7.—School principal's office. Enter father with Tommy; demands that child be admitted to school; principal attempts to explain; father becomes more insistent and finally principal consents, calls for admission card, writes name of child and date of admission thereon, and in the space for age writes "Birth record not obtainable," this constituting a stain upon the child's record.

THE FATHER'S DEATH MAKES IT NECESSARY FOR TOMMY TO SEEK WORK AT THE AGE OF 14—BUT THE TRUANT OFFICER INTERVENES.

Scene 8.—Employment office. Boys seen seeking work. Tommy enters looking young for his years. Truant officer enters and questions boys. All but Tommy show birth certificates, establishing their ages. Officer compels Tommy to take him to his mother.

Scene 9.—Plain living-room; mother, pale and careworn, at sewing machine. Enter Tommy and truant officer. Officer announces: "Unless you can produce a birth certificate proving your son's age he must return to school." Mother unable to produce the required certificate, pleads with officer, but he is firm. Officer leaves. Tommy tries to comfort weeping mother.

THE AGE OF LOVE AND POLITICS.

Scene 10.—Porch of home of Tommy's sweetheart. Tommy, now 21, is seen with his fiancée, the daughter of a Congressman, who is seeking reëlection. Enter Congressman, conversation ensuing. Congressman tells Tommy of the political situation and asks him to register that he may vote for him. Tommy agrees and leaves for the registration place.

CANNOT VOTE BECAUSE CANNOT ESTABLISH AGE.

Scene 11.—Polling place, voters registering. Enter Tommy; applies for registration; age is questioned; clerk asks for birth certificate; none being forthcoming, registration is refused and Tommy is ejected while attempting to explain.

REFUSED A MARRIAGE LICENSE.

Scene 12.—Marriage license bureau. Enter Tom, his fiancée and her father; Tom applies for marriage license; clerk notices youthful appearance and asks for his birth certificate to prove legal age. Unable to produce the certificate, marriage license is refused. Tom and his fiancée leave, much dejected; father of fiancée, doubtful of the boy's record, advises Tom to wait a few years.

AN INHERITANCE ALMOST LOST.

Scene 13.—Tom's apartment—a few weeks later. Enter Tom, heartbroken. Seated at table in reflective mood, he opens mail; finds one letter reading:

> DEAR SIR:—By the will of an uncle, the late Thomas Jones of London, England, you inherit $50,000. Kindly call *with your birth certificate* and other papers which will establish your right to this inheritance.
>
> Yours truly,
>
> WARREN L. SCOTT,
> *Attorney at Law.*

Tom is first elated, but he notes the "birth certificate" requirement, and, knowing he has none, he despairingly throws the letter aside. In his despair he decides to once more search the old family records. He fails to find any record of his birth, but he does find the dog registry certificate, and his reflections upon this evidence of paternal solicitude for a bull-pup and the lack of it for a son are readily apparent. As he is refolding the dog registry certificate his eye catches the notation on the back: "Became father of a fine, bouncing boy on this date, also." He now hastily leaves for the home of his fiancée.

Scene 14.—Porch of sweetheart's home. Father seated, reading; Tom rushes up, shows the paper to father, and as they are examining it, notices the witnesses' names attached to the paper, fiancée comes out, prepared for walk. Explanations and all are happy. They all leave to hunt up the witnesses.

Scene 15.—Office of Smith & Brown, attorneys. Tom, his fiancée, and her father enter, explain their mission, show dog certificate; both Smith and Brown acknowledge their signatures attached to dog certificate as witnesses; remember seeing Tom when few hours old and noting birthmark on baby's neck. When now shown this mark of identification they make the required affidavits and things begin to adjust themselves for the usual happy ending.

TWO YEARS LATER.

PROFITING BY EXPERIENCE.

Scene 16.—Library adjoining bed chamber. Tom pacing up and down room; Congressman shifting uneasily in chair. Nurse comes out and whispers "It's a boy." Father and grandfather (Congressman) tiptoe into room. Doctor comes out, followed by Tom. Tom asks about birth certificate for his baby; doctor gets one out of his grip, they fill it out, and in great haste Tom rushes off to the birth registry office to have it recorded.

SOME SUGGESTIVE CORRESPONDENCE.

BREEDING HUMAN ANIMALS.

HELENA, MONTANA, September 3, 1912.

THE SECRETARY OF STATE,
STATE OF NORTH CAROLINA,
Raleigh, North Carolina.

DEAR SIR:—Will you kindly inform me if there is any law in your State requiring the operation known as vasectomy to be performed upon feeble-minded persons or idiots, or upon insane persons or habitual criminals, or an operation of similar effect upon females of such classes?

If there is such a law upon your statute-books, will you kindly send me a copy thereof; also of laws in restriction of marriages?

If this inquiry is not addressed to the proper official, will you kindly transmit it to such official? Very truly yours,

(Signed) GEORGE B. CONWAY,
State Accountant.

State Board of Health,
Raleigh, N. C., September 27. 1912.

Mr. Geo. B. Conway, *State Accountant*,
Helena, Montana.

My dear Sir:—Your letter of September 3d, to our Secretary of State, Hon. J. Bryan Grimes, has been referred to me for answer.

There is no law in North Carolina restricting marriages; the fit and the unfit are allowed to breed alike. This last statement, of course, does not apply to cattle, as our people realize that it is not good business.

Yours very truly,
W. S. Rankin, *Secretary*.

AS INDICATING THE NEED FOR VITAL STATISTICS.

................N. C., September 26, 1912.

State Health Department,
Raleigh, N. C.

Gentlemen:—I desire to locate in Beaufort County, but before I move would like to know about the healthfulness of that locality near Aurora and South Creek.

Any bulletins giving any information will be greatly appreciated.

(Signed) ....

North Carolina State Board of Health,
Raleigh, N. C., September 28, 1912.

Mr. ....
.... *N. C.*

Dear Mr. ....:—Your letter of the 26th inst. is received.

I appreciate the importance of your inquiry, as I fully realize that there are communities in the State of North Carolina with the incidents of sickness and the death rate two or three times as great as other places. Nevertheless, I am sorry to inform you that the State of North Carolina has no vital statistics law requiring the registration of all deaths, with their causes, etc.; therefore, it is absolutely impossible to give you the information which you seek.

Very truly yours, W. S. Rankin,
Secretary.

IF HE WERE A CITIZEN OF ENGLAND, INSTEAD OF "THE LAND OF THE FREE," HE WOULD BE CARED FOR.

..............N. C., September 16, 1912.

Hon. Gov. W. W. Kitchin,
Raleigh, N. C.

Sir:—As I am affected with a very bad sore, cancer, or something of that nature, and have tried everything that I was able, and have not been able to obtain any relief.

As I was born in .... County, N. C., raised in same and is a taxpayer in said county.

If there is any Hospital or any place of Medical aid of this kind in this State which is wholly or partially supported by the aid of the State. I would appreciate it and that you so much for you to aid me to secure treatment and a cure at such place, as I am a poor man and have had this trouble.

Hoping to have a reply by return mail.

Yours truly, ...

North Carolina State Board of Health.
Raleigh, N. C., September 27, 1912.

Mr. ....
............., N. C.

My dear Sir:—Your letter, under date of September 16th, to the Governor, has been referred to this office.

I regret exceedingly that the State has no provision which would be of any assistance to you. I would suggest, however, that you consult a competent surgeon at your earliest convenience, as the chance of removal or cure of cancer is directly dependent upon the disease being taken in hand in its earliest stage.

With kindest regards, I am

Yours very truly, W. S. Rankin.
Secretary.

MR. R. D. W. CONNOR COMPARES WAR AND DISEASE.*

"The past will teach us that the foundation upon which rests the power and stability of the State is the physical well-being of its people. The battlefield soaked in human blood, strewn with mangled bodies, and groaning from the suffering of its victims, fills us with unspeakable loathing; and, turning away with horror-stricken faces, we cry aloud against 'man's inhumanity to man.' With a thousand voices from every pulpit and press in the land we denounce war as the great crime against civilization, and upon a thousand gilded trumpets we hail the dawn of universal peace as civilization's last and greatest triumph. But if war is a crime against civilization, what shall be said of the existence among us of those conditions which produce preventable disease? Where war has claimed its thousands disease has reaped its tens of thousands. During the Civil War, whose heroes we honor to-day, while 19,000 brave North Carolina soldiers fell on the battlefield, disease increased the number to more than 40,000. For every American soldier killed in that struggle by bullets, three fell before the invisible shafts of disease. During the Spanish-American War the common house-fly slew five times as many American soldiers as were killed by Spaniards, and in that short and unequal struggle for every American soldier who fell before a Spanish bullet disease slew 14. It matters not how brave the soldier may be, how loyal to his flag, how enthusiastic in his cause, no measure of bravery, no degree of loyalty, no amount of enthusiasm can

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*From address of R. D. W. Connor, delivered on Memorial day (May 10, 1912), at Washington, N. C., made part of the *Congressional Record* through courtesy of Hon. John H. Small, and printed in pamphlet form for general distribution.

avail him aught if his body be wasted with disease, if his limbs refuse to obey the demands upon them, if his mind be dulled and deadened by living under insanitary conditions. And what is true of the soldier in war is equally true of the citizen in peace. Rome, once the world's mightiest empire, we are told, was destroyed by malaria. Last year alone in the United States, among the most enlightened people on earth, one single preventable disease destroyed as many persons as were slain on both sides during the four years of our Civil War. No people weak and sickly from living under insanitary conditions can ever make a strong, a prosperous, and a happy community. Though they may dwell in the most beautiful region on earth, though manufactures may prosper, though agriculture may thrive, though the arts and sciences may flourish, though architects may cover the land with gorgeous temples and palaces, though they build navies and raise armies greater than any the world has yet seen, if they do not destroy the conditions that produce disease, disease will take its silent and insidious course, daily undermining the health and decreasing the vigor of the race, and that nation must perish. We shall learn no lesson from the past more vital to our welfare than the lesson that it is the duty of every community to protect the lives and health of its people."

TRIUMPH.

By Helen Hunt Jackson.

Not he who rides through conquered city's gate
At the head of blazoned hosts and to the sound
Of victors' trumpets, in full pomp and state
Of war, the utmost pitch has dreamed or found
To which the thrill of triumph can be wound;

Nor he who by a nation's vast acclaim
Is sudden sought and singled out alone,
And while the people madly shout his name,
Without a conscious purpose of his own,
Is swung and lifted to the Nation's throne.

But he who has all single-handed stood
With foes invisible on every side,
And, unsuspected of the multitude,
The force of fate itself has dared, defied,
And conquered silently. And that soul knows
In what white heat the blood of triumph flows.

THE NECESSITY OF COURAGE.

Edward Cummings, M.D., in *Outdoor Life.*

But screw your courage to the sticking place.
And we'll not fail! —*Macbeth.*

Once everybody thought tuberculosis was always fatal. Now, I suspect, the pendulum has swung too far the other way.

Tuberculosis *is* a curable disease; swing onto that fact for your life. But that it is easily curable, or quickly curable, or that the way to health is steady and straight, never for one moment believe.

The truth about it, well as I can put it in a few words, is this: A case of beginning disease, with symptoms bold enough to show the case to be clearly tuberculosis, may be arrested or apparently cured in from three months to a year; but no case can be absolutely cured in that time. To really and positively *cure* tuberculosis takes *five or six years.*

I mean by that, after the patient has left the sanatorium, or finished his term of close treatment under his physician, he has still to remember he is not the man he was; that he must live a wholesome and rational life, with a strict limitation of his liberties, and keep for years under the guidance of an expert physician.

It is well to know these things at the outset, for the attitude of mind that you take in regard to your malady is a matter of the greatest importance, and you cannot take a right view of your case unless you know the facts.

Calmly and coolly, then, settle down to a long siege. Resolve that there is no length you will not go to save your health and life, and that you will wait your cure with patience. But above all and beyond all, like a flag above your house, set up this standard:

I will never, under any circumstances, allow myself to be discouraged.

A standard of courage you must have; it is an imperative necessity. Tuberculosis is a thing of ups and downs, and sometimes the downs are very long and frequent, and seem to grow successively worse. But if you have your mind set on getting well, you will ride these billows with a bold heart.

Remember some of the big bold fellows (your comrades in arms) who fought consumption with one hand and won glory with the other—remember the great Prince William of Nassau, who, racked with coughing, grasped and held the English throne and fought battles which changed the face of Europe. Recall that equally great prince of literature, Robert Louis Stevenson, who "chased the cure" in the Adirondacks, and who, though he died in the prime of life, succumbed, not of tuberculosis, but of apoplexy. Remember well this beloved Stevenson, a gallant heart in a frail body, charming the world from his sick bed. He dared do anything that any man dared do; he laughed deep and loved well, and in the end testified that "sick or well," he had "had a splendid life of it." Remember Doctor Dettweiler, the gentle German physician, who first cured himself and then numberless others. And remember the illustrious Trudeau, who "ages ago" went into the snowy Adirondacks a mere bundle of burning fever, weighing "no more than a dried lambskin," and is yet alive to the fulfillment of a noble destiny.

Think nothing of the long weeks of waiting. Do not be dismayed if the cough hangs on and the weakness continues, and the fever keeps up. Think nothing of a hemorrhage, though it frighten all the others. Do not worry if you lose weight. Do not let a failing appetite disturb you. Don't expect to sail upon a smooth sea all the way to the port of good health—be prepared for squalls. Simply wait; it is a waiting game. Follow out the order of your simple duties like a soldier. Do not depress yourself and your friends by talking about your afflictions; do not compare notes; do not brood and study; do not whine about your luck. Simply wait; and while you are waiting be serene, and fear nothing—nay, more, be gay!

Be gay! Be always gay! Why not? Did you think you could not? Pshaw! It is only a trick, a habit, a simple accomplishment; almost anybody can learn it. A few there are who cannot, and if you are one of these, we must manage to forgive you.

But there is one thing we could not forgive: you must not lose your nerve. Fight all the harder when everything goes wrong. Remember always, it is doggedness that does it. Make one mighty resolution to get well, and never go back on that.

And then, when you have won, you shall have made something more than a mere recovery; you shall know yourself for a true fighter; you shall have added something to your moral stature.

Thus, you shall derive new powers from calamity, and turn disease into character.

UNTO THE THIRD GENERATION.*

Elizabeth S. Kite, Field Staff New Jersey Training School for Backward and Feeble-minded Children.

The investigation of the family history of each of the 400 defectives sheltered in the Vineland Training School, Vineland, N. J., has revealed the lamentable state of ignorance which exists in the minds of even our more enlightened citizens in regard to the symptoms which are characteristic of feeble-mindedness. Society seems unaware that such degenerates should not be allowed to marry, or that where illegitimate unions have been formed the simple performance of the marriage rite before legally authorized functionaries does not in the least protect society from the venom of the race.

A striking instance of this lack of public recognition of defectives came to the notice of the institution in connection with a little girl of seven who was brought to us some fifteen years back.

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*From *The Survey* of September 28, 1912.

On investigation it was learned that the child had been born in an almshouse. Her mother, pretty, attractive, had formed an attachment for a man in the neighborhood, and the rumor was that they were engaged. Nothing came of it, however, for she was poor and was put to service with a family in a distant city. No one thought of her as feeble-minded; no one thought much about her at all, for her family had sunk so far as scarcely to emerge above the social level. The sad story of her mother which I shall tell—the grandmother of the girl at Vineland—had been forgotten, and the busy world went on its way intent upon cares and interests of its own. But it was only a few months before she came back, bringing with her the burden of approaching motherhood. Her mother, crushed under her own load of misery, was dying or dead, and the daughter went to the almshouse. Let no one suppose that this was tragic for her. Suffering comes only with intelligence, a sense of shame only with the power to grasp an ideal, and to realize that we have fallen below it. In her case, both conditions were wanting. Like an irrational creature she had followed a blind impulse, and as blindly accepted her fate, understanding nothing, learning nothing from her fall, which in her case was no fall at all.

Previous to these happenings, the respectable community in which they took place had been roused to indignation on learning that her father† had been holding criminal intercourse with one of his own daughters. He was a degenerate, and when he had been put in jail the public wrath was satisfied. No one thought of his wife, who, though she belonged to a good family, had lost all social recognition through her unfortunate marriage with this man of unknown ancestry. Feeble in health, weak in will, overworked, and above all broken-hearted, she had not proved the dominant factor in the union. All she could do was to transmit enough of her own gentle, refined nature to her defective children to make them a more dangerous social element than they could otherwise have been. So she sickened and died, and it was in an almshouse that the little grandchild was born with whom we must reckon in the generation now approaching maturity.

At this point the respectable community began to take an interest in the daughter, now a young mother. A humane though misguided feeling led one of its members to remove the mother and her baby from the almshouse, taking them into her own home. The step at first seemed admirable and was applauded on every side. The young woman was perfectly honest, strong, willing, and trainable in household affairs. There was something about her large, brown, appealing eyes that went to one's heart, while her gentle and unobtrusive ways won the approval of her mistress and the interest of her friends. But this was only for a time. It was not long before a strange look came into her eyes; her manners changed; she was not steady at her post; even her little child ceased to hold her, and she would be off and away no one knew where. The mistress, now deeply interested in the welfare of her charge, sought by every means in her power to bring the young woman back to her former self, but in vain. Failing here, she next sought out the cause of the change and found it in the person of a low, degraded fellow, recognized in the community as half-witted as well as alcoholic, besides being subject to strange drunken fits. Still hoping to save the girl, she attempted further to interfere, but received only insults in return. Feeling, rightly enough, that something ought to be done, she decided upon what seemed to her the only alternative, that of forcing the young people to marry. Both were willing to do this, since some one cared to bother with the arrangements which meant nothing to them. Lawyer and minister were promptly summoned and the pair duly recognized as man and wife before the law.

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†Further investigation showed this degenerate father to be one of a family of twenty brothers and sisters, many of whom had records similar to his. The completed history of this family has recently been put into book form by Dr. H. H. Goddard under the title, "The Kallikak Family."

In a little cabin down the road, the already deserted wife brought her second baby into the world. Except for the constant care of her former mistress, mother and child must have perished, for the winter was hard and the husband did nothing towards their support.

But our good woman was not at the end of her resources; she had seen the couple married and she intended to see that the husband took care of his family. After infinite trouble and annoyance, she succeeded in getting the pair engaged to work on the land of an unmarried farmer living some distance back in the country and away from any settlement. There it was hoped they would learn to tend to their own affairs and grow into respectability. It was on this farm that a second child was born to the couple, so that the family now numbered three.

But with all our good woman's foresight, with all her honest intentions, she could not have hit upon a more ill-advised scheme. The farmer in question, though himself not of normal intelligence, was good-looking and far superior in every way to the drunken imbecile to whom the girl had been married. More than this, he proved to be the man to whom report had said she had earlier been engaged. So it was not long before another child was to come to the farm, which the husband and the farmer each referred to the other and which both consequently refused to claim.

The situation had become for the third time tragic, and our good woman felt she must again intervene. She more than suspected the farmer's guilt, and was indignant at his attitude. Reflecting on the husband's character and finding that it had always been unfit, she determined to see the pair divorced, and the woman then married to the farmer, who would thus be obliged to undertake her support. The determination was put into execution, though not until the two children born of the first marriage had been placed in a home, the farmer stoutly refusing to provide for them. The mother, however, sought to keep her oldest child with her, though in this she was not successful. Very soon she brought the little illegitimate girl to the woman who had interfered so much in her life, explaining that there would be no peace in the home while the child remained.

It was a really wise move, the one which our good woman next made, that of applying to have the child received into the Vineland institution. It had begun to dawn upon her that the family was not normal, and that special training was needed. In this way the little seven-year-old found entrance to the sphere in which she rightly belonged.

But the mother's story was not yet at an end. Her union this time proved successful. She was satisfied with her husband and he apparently with her. Her defects in housekeeping and personal tidiness did not wear on his dulled intelligence, while he possessed capacity enough to run his farm and provide for his constantly increasing family. To-day five strangely interesting, yet strikingly defective, children grace his home. The oldest girl is on the point of being put out to service.

One is appalled at the thought! Will some clean youth be attracted to her (for she's attractive, and only a trained eye could readily detect her deficiency) and so bring disaster upon himself and his home? Or will she sink to the lowest level of her kind, and add to the horror of degradation and crime with which the land abounds? Heaven forbid. Yet one of these fates surely awaits her, while society stands passively by. No one can be brought face to face with a fact so apparent without feeling that something must be done and done at once, if this girl and thousands of similarly defective girls are to be saved from themselves, and society saved from the evils they unwittingly engender.

This is indeed but an isolated case, yet in this girl's family alone, seven other deficient boys and girls are growing on to manhood and womanhood, each having the same tendencies, bearing the same taint; while from the families of her mother's deficient brothers and sisters other children of like grade are advancing swiftly on the selfsame road.

THE DUTY OF THE PHYSICIAN TO THE STATE.

Spencer P. Bass, Superintendent of Health of Edgecombe County.

All that the State can legally require of a citizen is that he obey the laws. But with obedience to the law the duty of the citizen does not end. He owes allegiance to the Government. Allegiance implies obedience, but it also implies fidelity and service. That which would be allegiance in one man might not be true allegiance in another. The educated man of affairs and the day laborer are in different relationship to the State. The interest of the former is greater, his intelligence broader, and his mind needed in directing the affairs of Government. As an individual, the physician owes to the State that which any other citizen of the same intelligence and station in life owes; but as a physician, he owes that which only the especially trained man can give. It is his duty to be physician to the State; to have the State for his patient; to consider the health of the whole people at all times. The State is concerned in the protection of the lives of its citizens. Laws have been enacted all having one aim—the conservation of life. The physicians of the State pointed out the need for these laws and worked for their enactment. They are the physician's laws. It is his especial duty to obey those laws which protect the public health, and he should obey the spirit of the law. Laws of this class are as a rule unpopular because they interfere with what man calls his personal liberty.

We know no better way to control certain contagious diseases than quarantine, and the State has said that those who have these diseases must be restrained from conveying them to others. Future generations may see quarantine abolished, but it is now necessary. The effectiveness of quarantine depends to a great extent upon the physician. Immediate isolation is essential.

The State says that when a physician suspects that a person whom he is called to visit is infected with certain contagious diseases he is empowered and authorized to quarantine the individual, or the household, according to the rules and regulations governing the same, and that he must immediately give notice thereof to the quarantine officer. The Attorney-General has ruled that this law is invalid. Because of a technicality the physician need only report those cases which he suspects and quarantines, and there is no penalty provided for failure to establish quarantines. His failure to immediately report to the proper authorities is inexcusable. The spirit of the law is plain. The ignorant or reluctant head of the house is not the one to be trusted with the safety of the community when the physician has been called.

When a case of tonsilitis or a suspicious eruption comes to our notice, we should give the State the benefit of the doubt. The health officer is responsible for diagnosis in doubtful cases, and the State has put at our command an excellent laboratory for diagnostic purposes.

We are prohibited from prescribing habit-producing drugs to those who have formed these degrading habits. We have no right to prescribe opium or cocaine to any one except as we would prescribe strychnine or digitalis. Necessarily, this law gives the physicians a wide range; but the spirit of the law is plain. When a physician sees a case of typhoid fever, the State says that he must instruct the attendants to disinfect and bury or burn the bowel movements. The State does not say that we must tell the attendants that the disease is fly and water borne; but the words, disinfect, bury, and burn, show us the spirit of the law.

It is not only our especial duty to obey the laws pertaining to the public health, but we must also see that they are enforced. We should see that our patients obey them, and we should see that our health officers are capable and that they do their duty. Support the health officer in his work and make it easier for him to be efficient. So-called business interests and ignorance are enough for the health officer to fight. Do not add to his trials opposition in the profession. Such opposition usually reacts to the personal gain of the officer, and the opposition and the public suffer together.

As the physicians of the State in the past have worked to procure needed legislation, so should we point out flaws in the old and the need for new laws.

In my opinion, we need a vital statistics law which requires the reporting of births as well as deaths, and this law should apply to rural districts as well as to cities.

Tuberculosis should be reported, and the Government should provide for the proper care of those who have this disease.

Typhoid fever should be reported and the house placarded. Laws providing for the protection of foodstuffs—especially milk—from contamination are needed. We should strive for larger appropriations for the use of both State and county health boards.

Without well paid officials whose whole time is given to the public, the State cannot make great headway against disease. The machinery for enforcing the law and for the education of the public must be efficient. The duties of the State Board of Health are many and its activity through its efficient Secretary is great. But it could be greater if it had more funds. The chief work which the Board is doing is the education of the public in sanitation.

We owe it to our patient, the State, to join in this campaign of education. In teaching the people the value of cleanliness lies the whole future of the State. As population grows more dense and the struggle for existence keener, the death rate grows larger unless education keeps it down. Laws are only partially effective unless the people recognize the value of the law.

We should instruct those with whom we come in daily contact. The fly-infested house, the unsanitary privy or well, the mosquito-breeding water, should receive as much attention from us as the stricken individual, because the State is also our patient.

I believe that there is no class of men which does its duty to the State better than the men of the medical profession—but our responsibility is great. The health of the State is in our hands. It is our duty to see that the "Government does those things which are necessary to the health of the community which the people cannot do for themselves, and that it compels every one to live in such a way that he will not be dangerous to others."

"TAKING CARE OF LITTLE CHILDREN."*

How Medical Inspection, Compulsory Education, and Advanced Child-labor Legislation Help Give English Children a Fair Chance in Life.

By Clarence Poe.

In my last article I said a good deal about what nature and human forethought had done to bring beauty to England as a country. It is not less worth while to consider what the English Government in recent years has done to bring beauty into the lives of the people themselves.

Much has been accomplished in this respect, and while opponents of the program have often cried out that it is tainted with socialism, most of the people have followed the advice given by Winston Churchill, when he said some time ago: "I would recommend you not to be scared in discussing any of these proposals just because some old woman comes along and tells you they are socialistic."

**Progressive Farmer*, August 31, 1912.

It was indeed a wise saying of old John Wesley's, that he did not believe in letting the Devil have all the good tunes; and we shall certainly do well not to let the Socialists copyright all the plans for social betterment. For myself, I do not believe at all in the general principles of socialism, but every political proposal ought to be considered solely on its merits, and if it makes for the enrichment of life and the uplift of our fellows, sensible people will not drop it just because of the old women who tell us it is socialistic. In an English paper now before me a disgusted Conservative, who "views with alarm" the present state of things in England, quotes a sentence John Stuart Mill wrote in 1859: "Each is the proper guardian of his own health, whether bodily or mental and spiritual." But all the men who accept that doctrine absolutely ought to have died in the individualistic age two hundred years ago. The man who said, "I am not my brother's keeper," was the first murderer, while it was the teaching of the Master whom Christendom professes to follow, that the strong should help the weak. It was fitting, therefore, that Mr. Lloyd-George in a recent speech, when taunted with the remark that he seemed to expect "a new earth," replied that he did wish to help in a simple way to bring about a new earth where "the best of all would be concentrated and organized to avert the worst from each."

It is along these lines that most recent English legislation has been framed, "organizing the best of all to avert the worst from each." Hereafter the strong and the weak together are to pay alike in order that the poor who become sick may not see their families suffer or find themselves without adequate medical attention. Already all the people are taxed to provide small weekly pensions for old men and women past their three score years and ten, thereby fulfilling what has been called "the holy obligation of lightening the steps of the aged as they descend the hill that leads to the ever-flowing river."

GIVING THE CHILD A FAIR START IN LIFE.

But most important of all, there has been a hearty recognition of the patent truth expressed by Mr. Lloyd-George in the words, "The future of this country rests entirely with its children, and every effort has been made to see that the boy or girl shall not begin life—the only life he has—tragically shackled by the curse of preventable disease or preventable ignorance." Compulsory education has long been the rule in England, and when an official was asked the other day the number of illiterate voters, it developed that less than one-third of 1 per cent—not one in 300—of those participating in the last election was unable to read and write. Compare these with the figures for our South Atlantic States, where the percentage of white illiteracy, according to figures published in *The Progressive Farmer* a few weeks ago, was 7.8 per cent, and for the South Central States 9.2 per cent. Even in Ireland, the percentage of illiteracy is now very low. I did find one application for an agricultural bank loan which the applicant had signed by making his mark, but on inquiry, I learned that it was not because he could not write, but because an accident had injured his hand! The Government provides for compulsory education up to the age of fourteen, though providing that partial exemption may be had under certain conditions for town children over twelve and farm children over eleven. Free text-books are provided, and provision is also made for furnishing one meal a day to poor children who are plainly under-nourished.

HOW MEDICAL INSPECTION PAYS.

In the South, of course, where the population is not so congested, where there is no excuse for unemployment, and where there is little bitter poverty, there is little occasion for arranging for meals for the poor—although it must be admitted that bad cooking and improper food combinations lead many a child to suffer from under-nutrition, when the amount spent for the food is quite ample. Nor is there serious need in the South for free text-books. In one particular, however, we must follow England's example, and the quicker we do so the better. We must provide for the medical inspection of school children. In every generation since the beginning of time thousands and thousands of children have gone through life maimed and handicapped because of diseases which might easily have been cured if treated in time.

The benefits already apparent from medical inspection in England are enough to indicate how many Southern children we are dooming unnecessarily to weakness or death, and it is not surprising that Hon. Percy Alden, a distinguished member of Parliament, said to me the other day: "We are simply going to have a new race of people as the result of the medical inspection of school children and the provisions for preventing and curing disease in the new National Insurance Act." Through medical inspection in England, thousands of cases of incipient tuberculosis have been detected and the child-victims taken in hand in time to save their lives; whereas, without such inspection, the children would have gone on until they themselves filled consumptives' graves, meanwhile dragging thousands of schoolmates to death as a result of ignorantly spreading the contagion. Mr. Alden says that in 1910, 60,000 of the children examined were discovered to be tuberculous, while 200,000 were found to have defective vision, and 160,000 adenoids or enlarged tonsils. The simple treatment for adenoids, or the use of glasses where the eyes are defective, often begins a new life for the child. And not only are diseases detected by medical inspection, so that they may be cured in time, but knowing the physical condition of the child often enables the doctor to advise what occupation he should not enter, or what line of education he should or should not take up. Mr. Alden mentions this as one of the most notable benefits of the system.

REDUCING THE INFANT DEATH RATE ONE-THIRD.

As a matter of fact, however, the State does not wait until the child starts to school to begin looking after its health. The shockingly high death rate among infants has excited the interest of English authorities, as it has begun to excite the interest of people at home. In every country on earth thousands of children die every year simply because their mothers are ignorant of the elementary principles of care and feeding. How many lives might be saved by greater knowledge is illustrated by the experience of Huddersfield, where a law was passed compelling early notification of births, and providing medical advice for the mothers, with the result that the infant death rate was reduced from 138 per thousand to 85. This remarkable demonstration, showing that previously one-third of the little ones had gone to their graves unnecessarily, startled the Nation. Parliament quickly passed a bill, applicable to a large part of the population, requiring the local medical authorities to be promptly notified of each birth, the woman health-visitor or nurse calling upon the mother at the earliest possible moment. The results for the Nation at large have been almost as remarkable as were the results in Huddersfield alone. In 1901, of each 1,000 children born, 151 died under one year old; in 1910, only 106 died.

GIVING THE CHILD THE CHANCE A COLT GETS.

Of course, after being so careful to see that the child gets a fair physical start in life, England exercises the simple farmer-sense which teaches a man that even a colt should not be worked too early, and does not allow her boys and girls to be maimed for life by premature labor in the factories. Time was, of course, when the conditions here, in this respect, were hideous; and Elizabeth Barrett Browning voiced the indignation of England's awakening conscience in her matchless poem, "The Cry of the Children":

"The young lambs are bleating in the meadows:
  The young birds are chirping in the nest;
The young fawns are playing with the shadows:
  The young flowers are blowing toward the west—
But the young, young children, O my brothers,
  They are weeping bitterly!—
They are weeping in the playtime of the others,
  In the country of the free."

But England long since changed from an attitude of indifference to one of the most watchful concern for her future citizenship employed in factories. Her child labor laws to-day, unlike those in some of our southern states, are not mere pious declarations, but are enforced to the letter. An ample number of inspectors are always at work looking after the conservation of what must ever be the most important resource of a state—its child-life. There are stringent rules to prevent children from being employed under age, medical certificates are required for those under sixteen, and either the parent or the employer, or both, may be punished for any violation of the statute.

SOME LESSONS FOR THE SOUTH.

Clearly, there is many a lesson we should do well to learn from British history and British legislation. The appalling infant mortality, no less marked in America than in England, is a problem that with us must be dealt with individually, but we should unite to bring about compulsory education in some degree, medical inspection of school children, and better child-labor laws. Of course, there will be objections to all these lines of progress; but this should not stand in the way of their adoption. It will be argued by some, for example, that medical inspection of school children will cost a little money. On the other hand, must it not be admitted that the child who is physically disabled fails to give an adequate return for what the State spends on his education? And is it not true economy, therefore, for the State to see that the expense of schooling the child shall not be lost through failure to discover the physical defects which stand in the way of his utilizing the education he gets?

England's concern for her child-life is not only very practical statesmanship, but very practical Christianity. What is it John Hay says in "Little Breeches"? I fear I cannot recall the quotation exactly:

"Taking care of little children
. . .
Is a dern sight better business
Than loafing around the throne."

In my next article I shall describe England's gigantic system of coöperative help for those who are sick, or unavoidably out of work, and the scheme of Government pensions for the old.

LONDON, ENGLAND.

THIS BULLETIN WILL BE SENT FREE TO ANY CITIZEN OF THE STATE UPON REQUEST

BULLETIN

OF THE

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THE LIQUOR PROBLEM AND PUBLIC HEALTH

If, in this great forward general movement for sanitary reform and public health work, we ignore the alcohol problem, it will leave a great gap in our line of battle.—Prof. William T. Sedgwick, Massachusetts Institute of Technology.

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BULLETIN CONDIMENTS

"I ask you while hope is still fresh and enthusiasm unchilled to gain some conception of the solemnity, the vastness, the unity, the purpose of life: to reflect that you are bound by intelligible bonds to every suffering, sinning man and woman; to learn while the lesson is comparatively easy, the secret of human sympathy; to search after some of the essential relationships of man to man; to interpret a little of the worth of even trivial labor; to grow sensitive to the feelings of the poor; to grow considerate to the claims of the weak."—*Bishop Westcott.*

"The only remedy for vice is to remove the ignorance from which the vice originates."—*Mary H. Hunt.*

"The highest form of agitation is education. To enlighten the public mind, to quicken the conscience of the people, and to federate their energies, is to prepare an invincible and triumphant force against any iniquity. For this work there is no substitute. Facts are the fingers of God; intelligence is the basis of conviction; conviction is the mother of action, and action is the sole secret of victory."—*J. Q. A. Henry.*

"The hope of a nation rests in the education of the young. This is of the greatest importance, for upon the present generation is laid the responsibility of choosing the part it will play toward posterity, and thereby of shaping the character of future generations. Educate thoroughly by precept and teaching; let us do all we can to instill into our children sound knowledge in regard to alcohol and its effects, but let us not lose sight of the ever-present need of checking the love of strong drink which is ruining men, a tendency which is spreading among women, and is spoiling in them all that makes for truest motherhood."
Sir Thomas Oliver, F. R. C. P.

"When one considers in detail the relations of alcoholic indulgence to disease, the numerous and important ailments of which it is the direct cause, to say nothing of the indirect influence on human misery and degeneracy, one can hardly avoid realizing that it stands almost, if not altogether in the front rank of the enemies to be combatted in the battle for health. * * * If in this great forward general movement for sanitary reform and public health work we ignore the alcohol problem, it will leave a great gap in our line of battle."—*Prof. W. T. Sedgwick, Mass. Institute of Technology.*

"I believe that the prevention of alcoholism which is a preventable disease, the prevention of individual and national deterioration through its injurious effects, comes as much within the sphere of action of the medical health officer as tuberculosis or small-pox. I believe that any preventable disease which has a distinct bearing on individual efficiency and national progress, comes clearly within the duty of the public health officer."—*Dr. G. W. Webster, Pres. Ill. State Board of Health.*

The alcohol question presents itself at every corner to every man and woman desirous of solving the great social problems that await solution. It is a kind of root problem, the settlement of which would necessarily involve an adjustment of innumerable other things which have a destructive effect on every hand. As a mere matter of economy and time this is a question worthy most serious consideration.—*Sir Vesey Strong, Lord Mayor of London.*

"Intoxication is not the wine's fault, but the man's."—*Chinese Proverb.*

An Appeal to Boys

"Your first duty in life is toward your *afterself.* So live that your afterself—that man you *ought* to be—may in his time be possible and actual.

Far away in the years he is waiting his turn. His body, his brain, his soul, are in your boyish hands. He can not help himself.

What will you leave for him?

Will it be a brain unspoiled by lust of dissipation, a mind trained to think and act, a nervous system true as a dial in its response to the truth about you? Will you, boy, let him come as a man among men in his time? Or will you throw away his inheritance before he has had the chance to touch it? Will you turn over to him a brain distorted, a mind diseased? A will untrained to action? A spinal cord grown through and through with the devil grass of that vile harvest we call wild oats?

Will you let him come, taking your place, gaining through your experiences, hallowed through your joys; building on them his own?

Or will you fling his hope away, decreeing wanton-like that the man you might have been shall never be?

This is your problem in life; the problem of more importance to you than any or all others. How will you meet it, as a man or as a fool?

When you answer this, we shall know what use the world can make of you."—*David Starr Jordan.*

THE LIQUOR PROBLEM

Relation to Public Health Problem

Introductory.—Some one has facetiously remarked that liquor is certainly a powerful stimulant, because it produces almost as much excitement among those who abstain from its use as it does among those who use it too freely. There is at least enough truth in this remark to cause one to hesitate to leave the tranquil path of his own opinions on the liquor question to negotiate the highway of public opinion where the exposure to unscientific, sentimental controversy is not inconsiderable.

Liquor Problem Repulsive to Scientific Mind.—As an object of scientific interest and study, the liquor problem has been for a long time somewhat repulsive to minds with a cultivated taste for exactness. There were two reasons for this attitude of scientific men to the liquor problem:

First, so much of what has been said on the liquor problem is in the form of vague generalization or gross exaggerations. Take, for example, an address by a member of Congress, printed and distributed by Congress for its educational effect: In this address it is estimated that 680,000 deaths occur annually in the United States as the result of the use of liquor. As the total number of deaths in the United States is 1,500,000 annually it will be seen that about half the deaths in the United States, according to the above estimate, would be chargeable to liquor. This estimate was based upon the study by an insurance company of the relative death rates of abstainers and non-abstainers among their policy holders, which represent a selected population composed of males above the age of eighteen, and certified as good risks by medical examiners. The conclusions drawn from this *exceptional* population are used in the address referred to as applicable to the *general* population. How faulty this method of estimating the effect of liquor on the general population is, will appear when we recall (a) that one-half of the deaths occurring in this country are women, (b) that one-fifth of the deaths are composed of children under five years of age, and (c) one-third of the deaths occur under the twentieth year of age. Bearing these facts in mind it is impossible to understand how any one, even without a statistical turn of mind, could entertain for a second the proposition, based upon a very small and exceptional part of the population, that one-half the deaths in the nation are the result of alcoholic intemperance. Enthusiasts would do well to remember the words of Sir Thomas Brown to the effect that, "many, from * * * an inconsiderate zeal unto truth, have too rashly charged the troops of error and remain as trophies unto the enemies of truth." The writer questions whether there is an example in history that will warrant agitators in any cause, however deserving it may be, in using exaggerations in lieu of facts to attain the desired end.

Second, the scientific mind has been prejudiced, without complete justification, we think, against taking an important part in the solution of the liquor problem by the inconsistency of many who preach temperance in one thing and practice intemperance in something else. The writer is acquainted with a well known minister of the gospel who usually takes two cups of strong black coffee before delivering his sermon on temperance. And this reminds us of another temperance pulpiteer who is reported to have advanced, as an argument against the use of alcoholic liquors, the fact that there were so many other things that would take the place of liquor, and as proof of that statement pointed out "that splendid remedy Peruna." This brother's qualifications to compare the effect of ordinary whiskey, which is fifty per cent alcohol, and Peruna, which is twenty-eight per cent alcohol, readily appears from the alcohol content of the two stimulants. Most any one could get along without the fifty per cent mixture if well supplied with the twenty-eight per cent mixture.

Awakened Scientific Interest in Liquor Problem.—The scientific forces have not been justified in holding aloof from the liquor problem any more than a good man is justified in remaining out of a Christian organization because there are liars and hypocrites in the church. This the scientific and thoughtful minds seem to be realizing for the literature on the liquor question during the last ten or fifteen years has contained a continually increasing amount of good matter from thoughtful and exact minds. Moreover, scientific research has made discoveries as to the effect of liquor that have shown the limitations of alcohol as a drug, and at the same time made clearer to the public mind its far-reaching deteriorating effect on the race.

Careful and Unbiased Authorities on Liquor Problem.—The following books and publications probably set forth the attitude of the scientific mind to the liquor problem: We should probably mention first the work of the Committee of Fifty, carried on between the years of 1893 and 1903, and published in six books. The first five of the books represent the study of the Committee of Fifty of the liquor problem from four points of view, the books being entitled (a) "The Liquor Problem in its Legislative Aspects," (b) "The Economic Aspects of the Liquor Problem," (c) "Substitutes for the Saloon," and (d) and (e), (2 vols.), "The Physiological Aspect of the Liquor Problem." The sixth book is, for any one interested in the liquor question, the first one that should be read, because it is a condensed summary of the other five books. This sixth book is entitled "The Liquor Problem"; it can be obtained from Houghton-Mifflin Company, New York City, for the price of $1.00, and can be carefully read, by the average reader, in four or five hours. Every well informed citizen owes it to himself and to his country to read this sixth book. After reading it if any one wishes to go further, they can purchase the works of the Committee of Fifty, which will allow them to go fully into the special phases of the liquor question. The best recommendation of the authoritative and unbiased nature of these books by the Committee of Fifty is the personnel of that committee, which contain the names of Carroll D. Wright, Charles W. Eliot, Seth Low, Charles J. Bonaparte, H. P. Bowditch, Edward G. Andrews, W. O. Atwater, Daniel C. Gilman, Washington Gladden, R. H. Chittenden, William H. Welch, Richard W. Gilder, and others of like standing in the world of thought and influence.

Another book characterized by high fact content and exactness of statement, written by a statistician, is a book by Mr. Edward Bunnell Phelps, editor of the *American Underwriter,* which is entitled "The Mortality From Alcohol," published by Thrift Publishing Company, New York City, and can be obtained for the price of $2.00. The article in this BULLETIN on "Liquor and the Death Rate" is nothing more than a review of Mr. Phelps' book, which is, to the writer's mind, one of the most authoritative and unbiased discussions of the liquor problem that we have seen. This book is the first to present the problem from its relation to our national death rate in a way that will appeal to the scientific and statistical mind of the country.

Another work that I should probably mention in this connection is that of Sir Victor Horsely, entitled "Alcohol and The Human Body."

For a general study of the subject the writer would place this last book next to "The Liquor Problem," by the Committee of Fifty.

A publication that is well deserving of the attention of students of this great problem is the *Scientific Temperance Journal,* 23 Trull street, Boston, price 60 cents a year. The character of the contributors to this journal recommends it as authoritative and fairly unbiased. On looking through the files of this journal we are well impressed with the names, among the list of contributors, of such men as Alexander Lambert, Richard C. Cabbott, and professors of physiological chemistry, pathology and medicine in some of the very best universities of the world.

From a study of unbiased literature like that above mentioned, based upon painstaking and careful scientific experiments and sociological research by those of open minds, one is forced to conclude that the liquor problem is not only a big moral problem and a big economic problem, but also

A BIG PUBLIC HEALTH PROBLEM.

This will appear from the relative importance of liquor as a contributor to our death rates; it can be shown that the health and life destroying influence from liquor results in 66,000 deaths a year in the United States; that one out of every twenty deaths is due to liquor; that one out of every twelve deaths of the adult population is due to liquor; that one out of every ten *male* deaths is due to liquor; and, that one out of every seven and a half adult males is the result of the use of liquor. The relative importance of the liquor problem as a public health problem will appear from an examination of the following table, which gives the more important preventable causes of death with their approximate number of deaths per year in this country:

Tuberculosis	150,000
Infantile diarrhœas	80,000
Liquor	66,000
Typhoid fever	35,000
Diptheria	30,000
Malaria	15,000
Whooping-cough	12,000
Measles	11,000
Scarlet fever	11,000

Before taking up the liquor question as a health problem the editor wrote to all of the State boards of health of the United States inquiring as to whether or not they had published any literature on the liquor problem in its relation to public health. This inquiry has shown that health officers have given very little specific attention to liquor as a cause of preventable death. In our opinion the health officers of the country have been too slow in recognizing their relation to the liquor problem; however, we believe that once they have recognized that the fight against alcoholic intemperance is *their* fight, they will give such telling support to the forces of temperance as to largely atone for the lateness of the hour in which they come upon the field of battle.

Probable Method of Attack by Health Officers.—The public health forces will introduce somewhat of a distinctly new method of attack in fighting the liquor question. Much educational work has been done in the past in opposing alcoholic intemperance, but much of that work has been discounted on the ground that it was being carried on by "temperance cranks," extremists. Now, if boards of health, as representing states or counties, should engage in this fight, the educational work that they would do, and this would be their only point of attack, could not be discounted to the same extent as the work of private individuals or temperance organizations has been; moreover, the health authorities in attacking the liquor problem would lay special stress on certain phases of the problem that we believe have not been sufficiently impressed upon the public mind; (a) such phases as the false idea of liquor being an aid in physical or mental work; (b) the fact that a man drinks raises a question as to the stability of his mind to begin with, that is, that the liquor habit is often the result, *not* the cause of mental weakness, and therefore, the drinking habit is a reflection on a man's sanity; and (c), last and strongest we would stress the effect of liquor on heredity, its effect "unto the children of the third and fourth generation."

With such able men behind our guns as Dr. Aldert S. Root, Dr. Cyrus Thompson, and Mr. Clarence Poe, as we have in this issue of the BULLETIN, we are firing this, our first broadside of a forty-one thousand edition of the BULLETIN against the forces of alcoholic intemperance. We have a large amount of ammunition in reserve, and the readers of the BULLETIN will hear from us from time to time on this question.

NORTH CAROLINA,
STATE BOARD OF HEALTH. } *In Court of Public Opinion.*

THE PUBLIC vs. THE LIQUOR PROBLEM

BILL OF PARTICULARS.

POVERTY.

First. That liquor causes twenty-five (25) per cent of all poverty handled by charitable organizations.

Second. That liquor causes thirty-seven (37) per cent of all poverty handled by almshouses.

Third. That liquor causes forty-five (45) per cent of destitution among children.

CRIME.

Fourth. That liquor is an accessory cause of fifty (50) per cent of all crime, the principal accessory cause in thirty-one (31) per cent of all crime, and the sole cause of sixteen (16) per cent of all crime.

MURDER.

Fifth. That liquor kills one out of every twelve adults, one out of every ten *males,* one out of every seven and one-half *adult* males, and altogether results in the death of 65,897 citizens of the United States every year.

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Mr. Edward Bunnell Phelps, expert statistician and author of "The Mortality of Alcohol."

ATTITUDE OF THE MEDICAL PROFESSION TO THE USE OF ALCOHOL IN MEDICINE

By Dr. Aldert S. Root, Raleigh, N. C.

As a Word of Preface.—We shall deal with alcohol not as a beverage, but as a drug—just as any of the numerous remedial agents which are recognized as standard by the American Medical Association. Much has been written upon the subject in the past decade—much which is foolish and sentimental—much which is wise and scientific. The great temperance wave which has swept over our states in recent years, where it has been conducted wisely and free from fanaticism, has begun to awaken us to our enormous economic waste as a nation, and to open the eyes of the public to the individual physical impairment which so frequently follows in the wake of the alcoholic habit.

Partly due to the influence of this movement, but more largely, I think, a sequence of scientific evolution, there has accrued in the past ten years such a mass of scientific facts bearing upon the action of alcohol upon the tissues of the body, that medical opinion as to its efficiency in disease is rapidly and widely changing.

Past Attitude of the Medical Profession Towards Alcohol as a Drug. That alcohol has been used as a healing drug through the generations of the past can not be gainsaid, for constant references to its use are to be found in the archives of ancient, mediæval and modern medical literature. In text-book and precept it has been taught that taken in moderation in health it aids digestion and prolongs life, and that in fever acts as a food; supports the failing heart, sustains the digestion and so carries the exhausted patient through the dangers of the disease. But no theory, venerable though it be, stands without challenge and in the light of present day research upon, and knowledge of the drug, the medical profession is fast realizing that through these past ages it has been shackled with a false conception as to the effect it produces, and hence beneficial result in disease.

Present Attitude of the Medical Profession Towards Alcohol as a Drug.—In regard to the claims made for it, experiments have shown that in the stomach it does not increase the flow of gastric juice; that it increases the gastric mucous as any irritant would, but the secretion of pepsin which aids in digestion of food is *not* increased.

As to its stimulating properties, that is, its action upon the heart, the apparent increased power is not due to the heart muscle itself, but to a paralysis of the nervous mechanism which controls the heart. Deprived of this check it beats faster and harder, pumping the blood more actively, but tending ultimately towards exhaustion. Its action then is a paralysis of control; you are lashing the race horse before he enters the race.

Careful and repeated experiments have shown over and over again that except transiently there is no rise, but a steady fall in the blood pressure. In acute illnesses, grippe, fevers, blood poisoning, etc., substances are formed in the blood called "anti bodies," which antagonize the action of germs, facilitating their destruction by the white blood cells and neutralizing their poisons. This is Nature's strongest defense against disease. Scientific research has shown that alcohol restrains the formation of these marvelous anti bodies. It puts to sleep then the sentinels on guard, and the invading germs enter the citadel of the human body.

Without going further into the way in which alcohol acts, for this will be more fully discussed in another paper in this issue—let us see for a moment how these researches have affected the attitude of some of the leading medical men in this country.

Authoritative Opinions.—Dr. David Edsal, recent Professor of Medicine at the University of Pennsylvania, now of Harvard, says: "I personally use almost no alcohol in treatment and have not for years. I have treated hundreds of typhoid cases with it, in earlier years, and hundreds without it. I am thoroughly convinced that delirium is more frequently present in acute cases when it is used than when not used, and that general prostration and failing circulation are not benefited, so far as one can observe clinically, but seem rather to be harmed. I think this is in agreement with our knowledge of its physiological effects, experimentally. I think it can be used, with benefit perhaps, and at any rate rationally, with an initial chill to dilate peripheral vessels, in occasional doses as a soporific, and at times to increase appetite and (in certain of its forms especially) as a food. These latter uses of course refer to other conditions as well as to acute infections. These are, however, only occasional indications for its use and not urgent ones. I doubt whether other uses are indicated, and I feel convinced that on the whole most conditions in which it has been used do better without it."

Dr. Howard A. Kelly, of Johns Hopkins, Baltimore, one of the foremost surgeons in the United States, says: "I began my practice in private life by prescribing alcohol in its various forms as an easily diffusible stimulant in low fevers, in periodic weakness and exhaustion with the common custom of a generation ago. My medical experience has taught me that the effect is temporary and evanescent; that the drug (for such it is) does no real good. * * * It is clear in the light of recent experience that alcohol ought to be classed in the list of dangerous drugs."

Dr. Richard C. Cabot, one of Boston's most distinguished physicians, says: "The statistics of the Massachusetts General Hospital indicate a rapid and striking change of view among the staff of that hospital, especially in the last five years, when it has become generally known that alcohol is not a stimulant, but a narcotic."

Dr. William Osler, in his "Practice of Medicine," says, with reference to the use of alcohol in typhoid fever: "Alcohol is unnecessary in a majority of cases. Of late years I have used it much less freely." In the treatment of pneumonia "alcohol does not seem to raise the blood pressure in fever, and the studies of Boggs and Cook in my words seem to indicate that it is not of much value in progressive *vaso motor* collapse. He adds, "I should be sorry, however, to give up its use in the severer forms of typhoid and of pneumonia."

The following is an extract from a letter from Dr. David Reisman, of Philadelphia, one of the most practical medical men in that city:

> "During the years that I have been in practice I have seen a great change in the attitude of the medical profession toward the use of alcohol in disease. It was customary to prescribe whiskey and brandy in every case of fever, from the very beginning. At the present moment few physicians do this. My own practice is not to use alcohol at all, either for typhoid fever or pneumonia, unless certain conditions are present. These conditions are, in typhoid fever, a prolonged course with marked wasting and enfeeblement of the circulation; in pneumonia, marked circulatory weakness, especially in persons addicted to the abuse of alcohol. The same thing applies to septicemia. Alcohol likewise is of use in the more sudden types of circulatory failure occurring in acute disease. Under none of these conditions is the amount required large. The place of alcohol in acute fevers has been taken by strychnia and by salt solution—salt solution introduced by the bowels, under the skin, or into a vein—and perhaps oxygen.
>
> "A use of alcohol for which there is no good substitute is in diabetes when the diet contains large amounts of fat. It seems then that the addition of whiskey makes the patient bear the fat better; not to speak of the food value of alcohol.
>
> "With regard to the use of alcohol as a stimulant to the appetite and in convalescence, one must discriminate between native Americans and foreign born persons. I find that many of the latter class do well when taking a little wine with their meals, and I doubt whether it is possible to get the same result in any other way. As far as I am concerned, I would not let any sentiment stand in the way of my prescribing a little wine for such patients if thereby I could benefit them."

In the treatment of diseases of children it has been my observation that specialists in this branch of the profession do not find any drug which well takes its place in cases of severe infantile diarrhœa and pneumonia with failing circulation. In such cases, while serving as Resident Physician in their hospital wards, I have repeatedly prescribed brandy and whiskey under the direction of Drs. Kerley, New York; Hamil, Philadelphia, and Gerhard, Bryn Mawr.

Dr. J. Crozer Griffith, Professor of Children's Diseases in the University of Pennsylvania, writes: "I believe thoroughly in the use of alcohol in disease, basing this view on the very evident good effects which long experience shows to follow. This in spite of all that has been written against it in recent years. I do not think that there is any other drug which exactly takes its place. This is my creed. Now I may at once modify it by saying that I think alcohol is a *drug,* and should be used as such; with discrimination and careful adjustment to the case, and not as a routine measure."

Dr. G. F. Still, Professor of Dieases of Children, King's College, London, in his "Common Diseases of Childhood," says: "The value of alcohol in the early stage of diarrhœa when there is extreme exhaustion and collapse is, I think, quite undeniable. * * * I have satisfied myself that five drops of brandy in a three ounce feed has a very valuable effect in preventing vomiting and also in assisting in the digestion of milk, etc."

With regard to alcohol in pneumonia he says: "In spite of all that has been said to the contrary I think that any unbiased observer must admit that brandy is sometimes very valuable in a bad case of pneumonia, but it is certainly not necessary in the large majority of cases; it is only when the pulse is becoming feeble or irregular and it is evident that the child is becoming exhausted that brandy should be given, and even then I am inclined to think that harm is sometimes done by giving large doses."

Trend of Medical Opinion.—It will be seen, therefore, from the above letters and writings of some of the most eminent medical authorities in the country that the general trend of opinion accords with the results of scientific research and is distinctly against the use of alcohol to any appreciable extent in the treatment of diseased conditions: that when used at all it should be done in small amounts over a limited period of time; that its use should be so restricted as to apply to states of collapse and failing circulation and not given indiscriminately as it was a generation ago. And this view is rapidly becoming a general one, for the curtailment of the use of alcohol in disease is as great abroad as it is in this country. As an example a manifesto to the public was issued in 1910 by one hundred and one physicians of North Wales, thirty-four of whom are health officers, to the following effect: "Recognizing the very serious injury to the national health caused by alcoholic drinks; recognizing also that the habit is rarely, if ever, suddenly acquired, but grows gradually out of what is considered a moderate use, and generally in the belief that such moderate use promotes health and increases the power to work; convinced moreover that this belief is a dangerous delusion and one which prolonged observation and exact experiments of scientific men have conclusively proved to be so, we, the undersigned, appeal to all our brethren in North Wales to join us in an endeavor to discountenance the various popular errors that still largely prevail upon the subject. We appeal to them not to give or seem to give the sanction of their professional authority to any general employment of alcoholic drinks in cases of disease. We believe that these drinks are not necessary for the promotion of health, that they do not increase, but on the contrary impair, physical and mental efficiency and that they do not prolong life."

Large Hospitals Discarding Alcohol.—Now let us see if the profession has "practiced what it has preached." Has there been a reduction in the use of alcohol as a drug? Hospital statistics in regard to this point are very remarkable. In the Massachusetts General Hospital, the largest municipal hospital of Boston, in the year 1900, over $3,000 were spent for alcoholic stimulants for the patients. Seven years later, in 1907, the amount was only $813, and during this time the number of patients had increased from 5,000 to over 6,000.

In the Bellevue Hospital, New York City, in 1903, 713 gallons of whiskey, 55 gallons of brandy, and 75 gallons of sherry were consumed by patients. In 1911, 324 gallons of whiskey, 35 gallons of brandy, and 55 gallons of sherry were used.

In the institutions under the care of the Metropolitan Asylum Board in London (these treat purely medical cases) it fell from about $8,000 in 1896 to less than $750 in 1909. Figures like this could be multiplied indefinitely, but these are enough to demonstrate the decrease in medical use of the drug.

Medical Profession's Example Without Influence, Increasing Per Capita Consumption.—An observation, entirely incidental to the text of this paper but nevertheless an interesting one, is the fact that although there has been such a notable reduction in the quantity of alcohol used as a drug there has been no such reduction in the *per capita* amount consumed as a beverage.

Quoting from the United States Statistical Abstract of 1911:

In 1890 the *per capita* amount of distilled spirits consumed in the United States was 1.34 gallons, in 1900 1.28 gallons, while in 1911 1.46 gallons.

I hardly know how to correlate these facts for it seems to me that the present attitude of the profession, together with the crusade by temperance organizations in recent years, would have made an impress.

Conclusion.—As a final word upon the subject: I have shown that the tide is strongly against the use of alcohol as a drug, but I do not wish to give the impression that the whole medical profession has prepared to abandon prescribing it. So many facts in medicine have in the past been proven theories and so many theories shipwrecked upon the rock of inaccurate research and false deductions that the profession is rightly conservative and properly demands proof before relinquishing former ideas. But I do not believe with the present day methods of precision in research, and the hospital facilities for making practical observations, that the conclusions drawn from the work of the past ten years will be changed; I do not feel that the pendulum will swing back again, but that the present strong feeling against its use will continue and that the future will find the profession the strongest opponents of its use.

A FRIENDLY TALK TO BOYS: DOES IT PAY TO DRINK WHISKEY?

By Clarence Poe, Editor of "The Progressive Farmer," Raleigh, N. C.

I.

My Dear Boy:—That "Appeal to Boys," by Dr. David Starr Jordan, which Dr. Rankin is putting in the Bulletin this time, is one of the finest things I have come across lately, and the first thing I'd like for you to do is to read it. Then I'd like for us to have a little talk—a little friendly, brotherly talk, for I haven't gotten over being a boy myself—about whether it pays to start "taking a drink."

Now, I am not going to lecture you, and I am not going to say a word about its being an "awful sin" or anything of the sort. We are just going to talk about it as a business matter and find out if it pays. That's all.

Now, my conviction from a good deal of observation and study is that it doesn't pay, and I am going to tell you the reason why. If your drinking were simply a boyish prank I shouldn't have a thing to say about it, because I know that while you may play rough practical jokes and may take dare-devil risks now and then, that's just the boy in you, and you are straight and square and honest at bottom and you are going to come out all right.

What I want to say about this drinking business, however, is that it is a very different matter from these pranks and feats and jokes in which a boy may naturally and healthfully "let off steam." They may not leave you any the worse, but drinking and immorality will.

A great danger is that if you begin drinking at all you can't keep from drinking immoderately; you are young yet, but you have seen enough to know that. There are all kinds of chances that you will wind up as a dirty, bloated, worthless drunkard—a sort of man as Uncle Remus says, who is "not fitten to stop a gully wid,"—but what I want you to remember is that even if you should only drink moderately you will not live so long, you will not be so healthy, nor will you be so happy as you will be if you don't drink at all.

II.

In other words, no matter whether drinking is a sin or not, you want to live a good long life, and you want a healthy body, a steady nerve, and a clear brain, and you can't have these if you drink even moderately.

Take the matter of length of life. The life insurance companies have been keeping careful records of thousands and thousands of men, beginning, as they did, years and years before you were born, to find out just how drinking affects a man's health and length of life. It's their business, you know. Well, they started out when they began these records with the idea that a man was actually helped by using some whiskey—that was the belief a long time ago—and it was on this theory in England forty or fifty years ago that they tried to make a man named Robert Warren pay a higher premium, a higher rate on life insurance, because he was a teetotaler. So Warren started a society which has kept track of thousands and thousands of English insurance cases for over forty years; and what do you suppose the results show? They show that the death rate is over a third higher for moderate drinkers than for total abstainers.

In other words, in any given year four men die among the drinkers for every three who die among an equal number of abstainers. Of every 100 drinkers the life insurance companies count on as possible deaths in a year, 94 of the 100 come to the scratch and die—only six disappoint them by living on. But of every 100 expected deaths among people who don't drink at all, only 71 actually die. Seventy-one deaths among abstainers to 94 among drinkers!

Again, it has been proved that of every 100 persons thirty years old who drink, only 44 of the 100 will live to be seventy; but if you take 100 thirty-year-old persons who don't drink, 55 of the 100 will live to be seventy. Isn't it worth something to you (even if drinking paid in other ways, as it doesn't) to have a 25 per cent better chance to live out your "three score years and ten"? And the records show that you do have this 25 per cent better chance by not drinking.

III.

These figures are based on the English experience, but the figures for America tell the same story. In a recent address at the A. & M. College in Raleigh, I heard Capt. Richmond P. Hobson, the famous Spanish War hero, give the farmer boys there the showing of the American statistics. Among other things he pointed out that without drinking the prospect of life when you are twenty years old is forty-four more years of living, but with drinking only thirty-one years—an average reduction of thirteen years in length of life due to the drink habit.

Or take the evidence of Mr. Edward A. Wood, a practical insurance manager, of Pittsburg, Pa., who says furthermore that 40 per cent—nearly half—of the men who have such diseased bodies, weakened nerves, etc., that they can't get life insurance at all "are for causes connected with alcohol."

Experiments which a distinguished group of scientists made with a group of laboring men showed that even beer drinking decreased the output of labor 8½ per cent. In other words it took about ten men to do the work nine would have done if they had let even beer alone; and in clerical and intellectual work the damage by drinking was even greater. In head work or muscular work or sport, it is all the same thing: whiskey keeps you from "making good." You know no drinking boy can stay on your college football team.

It is because the people understand these things that all classes are frowning on the young man who drinks. If you want to get a job the boy who drinks is passed over, and the young fellow who doesn't is taken. That's one reason why the country boys so often beat the city boys in business: there is less drinking in the country. If you want to succeed in farm work or city work—as I hope you do—or if you want to marry the smartest or prettiest girl in the neighborhood (or the smartest *and* prettiest)—as I hope you do—it's all the same story. The chances are against you if you drink.

IV.

Now there's no use for me to discuss this subject further with you, and I can only ask you to look up the further facts set forth in this Bulletin. The whole story is that I want you and every boy to live out a long, healthy, happy life; and I want you to be a success as a farmer or a business man or a professional man, whichever you are, and I know the chances are against you having either a long life or a successful life if you drink. That's why I want all our Southern boys to have nerve enough to let liquor alone. We want to see the South the greatest section of the Union before you and I die, and in traveling about over the country it seems to me that one of the surest signs that we are going to be at the front is found in just one fact. And that one fact is that we seem likely to have in the coming generation in the South about the smallest proportion of whiskey-ruined boys, and therefore the greatest proportion of strong, sober, healthy, successful young men.

Of course, it will take some spunk to keep you in this class sometimes. You may get caught in a fix now and then when other boys are drinking and it will take more genuine spunk for you to be man enough to say "No" than it takes to ride a bucking horse or swim a river in freshet-time.

But if you will make up your mind dead sure that you are going to "stick to your stickums" and shake hands with me on this proposition, I am sure I can trust you to show the spunk when it's needed.

Sincerely your friend,

CLARENCE POE.

THE UNDERLYING FACTORS OF THE LIQUOR HABIT

BY DR. CYRUS THOMPSON, Jacksonville, N. C.

Man loves happiness and hates misery; but his efforts to escape misery cause most of his unhappiness.

Somebody, for instance, has remarked how much of the misery of life is caused by the fear of death—the dying of preliminary deaths; when, as a matter of fact, dying is only once unavoidably necessary, and is then ordinarily a performance "dead easy" to accomplish. And after all, dying is hardly so terrible as living. As an obscure, nameless minor poet has well sung:

"The burden of being, O Love, is not death:
The burden of being is living—
But there's joy in living with love at each breath,
The having of love and the giving."

And yet the fear of possible sickness, of death, of not living, what a destroyer of happiness and of life it is! We go all our days in bondage through fear of death.

Next to this as a source of human misery may be mentioned the fear of being alone. Eden is not Eden when you are by yourself. But,

"A book of verse underneath the bough,
A loaf of bread, a jug of wine, and thou
Beside me singing in the wilderness,
Ah, wilderness were paradise enow!"

Very early in the history of the race it was observed and remarked that it is not good for man to be alone—a feeling that moves the infant crying in the night, the man and the maid in the spring-time of life, the strong man in his prime, and all of us when the midday zest is gone and the shadows lengthen for evening's close. I look out upon the stars of the sky, and their separateness forever staggers me; and there is nothing so terrible as this individualness, this loneliness of everything. To escape it, living cells federate into organisms; insects and birds flock together; beasts are gregarious; men congregate, group into families and communities, and desert the country and build cities for companionship. There is no other so strong craving of the human soul as the craving for congenial comradeship. So to the average man, solitariness is hell, while even servitude in company is tolerable living. It requires an exceptionally strong nature to stand contented alone, to be independent, to feel sufficient in itself, to know that "the kingdom is within you"! The weaker we are the greater our fear, and the more readily we attempt by any means to escape the loneliness and the helplessness of ourselves.

To this sense of self-insufficiency we owe the best that we have in the world: our feeling of dependence is the parent of all our progress; and to the same feeling of insufficiency is attributable much of the worst and most pitiable that befalls the race.

The fear of pain and the disagreeable, to make our escape or to find help before the burdens of life—these are the problems that confront, appall, and entangle us. For ready help we turn to various material or immaterial stimuli.

The factors underlying the liquor habit, so far as the individual is concerned, are not different from those that underlie other addictions. The habitues differ and their environments differ; but temperament and environment determine for each individual his form of intoxication.

The love of a woman may for a time hold a man from his drink:

"No! Saki—take the wine away!
I have no need of it today;
So drunk am I with adoration,
No longer have I any need
Of commonplace intoxication.

How should a man whose eyes may drink
Her beauty, like the Northern Star,
In a delicious meditation,
Remain contented any more
With common wine out of a jar!
No, Saki—take the wine away."

Your work, your friends, your books and flowers may suffice for you. Fortunate is the man who can escape from himself and find strength in his work—the blessedest gift of heaven. It is the comforter, the very savior of the aged, as play—child's work—lifts the terribleness of life from children. Did you never notice how industrious old people become, and how miserable when increasing age takes their work from them? Work has become their habit, their stimulant, and they die without it.

Another temperament without fortitude to suffer pain and be still, without health to enjoy what appeals to and satisfies the strong, seeks solace in some drug. So the weary, the depressed, the disappointed, the troubled without pain, and the convivial, in his purposeless loneliness, seek victory o'er all the ills of life in alcohol. And if the will, the resultant of conflicting emotions, forbids the use of drug or drink, some simple faith or sweet influence of religion, may fill up the measure of your needs.

But the underlying factors are the same in every case; and the addiction, whatever the form of it, began in a response to a sense of need. It grew out of effort to escape the disagreeable, the ready satisfying of your hunger, your feeling of insufficiency. And now you are bound by your intolerable longing and discontent: your discontent is a continual famine, a dry and thirsty land where no water is. You might have resisted at the first; but your power now to resist the impulse is perished through non-use. Your appetite, accustomed to satisfaction, like a spoilt child, is imperious now; and your habit is the veritable controlling part of you.

This appetite which leads to enslaving habit may be hereditary in the makeup of the individual or it may be acquired by him; and, when acquired it is primarily due to defective training, to mismanagement in childhood. You have seen families of hereditary drunkards—a weakness of will to stand alone and resist, as much the heritage from ancestry as any other physical or mental characteristic. But you have seen drunkards come out of sober and sane ancestry, and sober men from ancestry given to drink. For the sober man may "spoil" his child, may pet him and humor his whims, until he becomes, when grown up, unable to resist the temptation to relieve his depression and be rid of the disagreeable by the temporary stimulus of alcohol. And the man given to drink, on the contrary, may so teach his children to endure hardship, to dismiss the disagreeable, to acquire self-control and self-respect, that they become sufficient within themselves without the aid of habit-forming stimulants.

The emotionally unstable may be educated in childhood to equilibrium and saving strength; and the emotionally stable, on the other hand, may be literally spoiled by faulty training. In other words, the drunkard is made by his father or his grandfather—not consciously, of course, but carelessly and certainly none the less. And sober men are made by right education.

Those, therefore, who proclaim prohibition as the remedy for the liquor habit, have need to broaden their propaganda to include not only the abolition of the saloon, but the realization of the divinity of family government, and the training and making of strong, happy, sober men. For the peculiar and inalienable duty incumbent upon parenthood is the rearing of children to happy living and good citizenship.

If legislation may do something, vastly more may be done by the wise regulation of the child's physical and psychic life, by the teaching of hygienic living for the making of strong bodies and self-respect for the creating of strong souls.

Let us instill into him courage and resolution, hardihood and high purpose, self-restraint and self-respect; teach these saving qualities into our children in their play (which is childhood's work) and in their work when they are grown older. And above all, teach them till they know it, that there is nothing dishonorable about honest work, but the failure to find it and do it.

Action in accordance with these thoughts is increasingly imperative in face of the increasing stress of life in the busy industrialism of today and tomorrow.

In this way, it seems to me, we may best prevent the state of feeling, that sort of insanity, which impels to the liquor habit, and not less to other ruinous addictions and defective mental states.

Let us begin with the child and his environment as the great underlying factors of the liquor habit. The Kingdom of Heaven, says Bouck White, is the kingdom of self-respect; and the kingdom must ever be within you.

"At the risk of wounding adult susceptibilities I must repeat that not much can be done for this generation in the way of changing the moral bent of grown-up persons. The fate of the world is determined by the influences which prevail with the child from birth to seven years of age, certainly from birth to fourteen years of age. Such is substantially the unanimous judgment of living psychologists. All our problems go back to the child—corrupt politics, dishonesty, greed in commerce, war, anarchism, *drunkenness,* incompetence and criminality. We know now that much of our labor for the radical betterment of society is costly and fruitless. It is because we are working against nature. We take the twig after it is bent and has stiffened into a tree. We take the brook after it has become a torrent. We take the fire after it has become a conflagration. God is teaching us, in ways made costly by our inaptitude *to begin at the beginning,* and to meet the demands of the situation by conforming to fundamental principles."

LIQUOR AND THE DEATH RATE

By W. S. Rankin, Secretary State Board of Health.

The Relative Importance of Different Causes of Death.

Until within the last two years one could have stated, on the authority of such unbiased students of the liquor problem and such prominent members of the Committee of Fifty as Dr. John S. Billings and Mr. John Koren, that there was no acceptable estimate of the number of deaths occurring annually in the United States attributable to alcoholic intemperance. Fortunately, we now have the work of Mr. Edward Bunnell Phelps, a trained statistician with unprejudiced mind, dealing with the mortality of alcohol. Mr. Phelps' work and estimate will certainly be that accepted by scientific men and unbiased students of this great economic, health, and moral problem as authoritative.

All estimates of mortality rates must rest upon the authority of the Bureau of the Census of the United States Government. According to our census there are one and a half million deaths every year in the United States. In addition to collecting the reports of these deaths it is the business of the Bureau of the Census to hold a kind of inquest in the court of public opinion over these dead, by collecting, classifying, tabulating and publishing, for general information, the principal circumstances connected with their deaths. Such information is most important, as from it the living may learn what are the most important causes of death, and by studying such causes learn how to circumscribe their effects.

In a general way the comparative importance of the different causes of death may be determined by the relative number of deaths with which each cause is charged. This statement should be qualified, for this general rule will hold only for those causes of death which are closely and directly connected with fatalities; for example, the approximate number of deaths from tuberculosis, typhoid fever, and gunshot wounds gives us a fairly accurate idea of the comparative importance of these causes of death. But, our general rule does not hold for those causes of death indirectly and remotely connected with fatalities; for example, malaria, hookworm disease, and alcoholic intemperance are important exceptions to the general rule above stated. The number of deaths set down opposite these and similar causes in the death rate tables do not represent the complete nor even the major part of their life-destroying power. The greater part of the evil effect of such indirect causes of death is wrought through their destructive action on the body defenses, making possible the entrance of other more fatal diseases, like those mentioned in the first group, that complete the fatal work which the milder disease instigated.

Now, to compare the importance of diseases remotely connected with fatalities, such as malaria and alcoholic intemperance, with diseases closely connected with fatalities, it is necessary to reduce the widely distributed effect of the former to its equivalent in total deaths, and then, balancing total deaths that are the direct effect of one disease with total deaths that are the indirect effect of another disease, reach a satisfactory conclusion as to the relative importance of the two diseases.

If these estimates are to have weight with minds that do their own thinking, they must be made by a trained statistician, and each detail entering into the estimate must be carefully stated, so that each step in the calculation may be subject to review by those who are interested in the subject. As to the reliability of statistical conclusions we wish to quote from Dr. John S. Billings, himself an expert statistician. "Where the chances are equally good that an observation may differ either on one side or the other from the exact truth, it is possible that in the mass the errors on opposite sides will balance each other. The individual bricks turned out from a kiln might differ considerably among themselves, yet one wall of one hundred courses of bricks will differ from another wall with the same number of courses but very little. A careless writer will sometimes put five words in a line, sometimes ten, yet the number of words in a hundred lines will vary little."

Certainly no question of greater importance or interest could be raised in regard to the liquor problem than as to the number of deaths occurring annually in the United States which may be traced to its combined direct and indirect effects. Mr. Phelps' book on the "Mortality of Alcohol" is an answer to this question, and the balance of this article purports to be nothing more than a review of that book. The book can be obtained from the Thrift Publishing Company, New York City, for the price of $2.00, and can be assimilated in six or eight hours reading.

METHOD ADOPTED BY MR. PHELPS OF ESTIMATING THE NUMBER OF DEATHS TRACEABLE TO LIQUOR.

Mr. Phelps began by excluding from the 187 causes of death, under which the deaths occurring in the United States are tabulated by the Bureau of the Census, those causes in which alcohol could not be suspected of having even a remote effect. The excluded list of causes embraced 54 causes of death which are limited in their effect to women and children. Women were excluded from consideration in order that the estimate might be simplified by limiting it to men only, and after reaching satisfactory conclusions in regard to the number of male deaths attributable to alcohol an estimate of the female deaths resulting from alcoholic intemperance could be arrived at with fewer complicating factors. After having excluded 54 causes we have left 133 causes in which to consider the effects of liquor; of the 133 remaining causes 27 were again excluded as not being in even a remote degree the result of the use of liquor. We have left, therefore, 106 causes of deaths in which to study alcohol as a factor in male deaths. Furthermore, as deaths under the age of twenty and over seventy-four form such a very small part of male deaths attributable to liquor, we may confine our estimate to a study of the male deaths between the above ages as possible results of the use of alcohol.

Three eminently qualified medical experts, with statistical training, were selected, and to each of them, independently, the list of 106 causes of death were submitted, and they were requested to write opposite each cause of death the percentage of deaths listed under that cause for which, in their opinion, liquor was responsible. The three independent estimates were then added, divided by three, and the average accepted as the percentage of the total number of deaths listed under each particular cause for which alcohol was responsible. Without going into wearisome detail we may say that Mr. Phelps advances good reasons for believing that the average of the three experts would not be altered to any appreciable extent, if the average opinion of the entire medical profession on the same facts were obtained.

To illustrate: It is a well known fact among medical men that liquor plays an important role in the causation of Bright's disease. The three judges, who we may refer to here as X, Y, and Z, stated, respectively, that liquor was responsible for thirty, forty, and twenty per cent of the total deaths from Bright's disease. As the census had charged Bright's disease with 22,222 deaths between the twentieth and seventy-fourth year of age, thirty per cent would be 5,254 of these deaths for which liquor was responsible. In like manner the percentage of deaths from the other 105 causes were calculated. To show how complete the list of 106 causes covered all deaths traceable to liquor, Mr. Phelps calls attention to the fact that for thirty-one of these causes, one or other of the three medical experts "considered the possible alcoholic connection so extremely remote as to justify him in declining to make any estimate."

THE VERDICT OF STATISTICAL AND MEDICAL EXPERTS AS TO THE ANNUAL NUMBER OF AMERICAN LIVES DESTROYED BY LIQUOR.

The registration area of the United States has a sytem for reporting deaths with the cause of death, etc., and comprises 51.8 per cent of our National population. In 1908 there were 320,130 male deaths reported in the registration area; 198,858 of these deaths occurred between the ages of 20 and 74. According to the estimate of the medical and statistical experts it was found that 10.3 per cent of all *male* deaths and 13.2 per cent of all *adult* male deaths were chargeable to liquor. These percentages give us, in round numbers, for the registration area, 32,855 male deaths a year as the result of liquor.

We must now try to arrive at some conclusion as to the effect of liquor on American women. In New York City only one-fifth as many women died from acute alcoholic poisons, delirium tremens, as died in London from the same cause; moreover, in an investigation by the London police as to the number of women visiting the saloons it was found that 39,541 women entered London saloons in four hours time. The presence of women in American saloons is comparatively rare. With these facts in mind, and after consultation with statisticians and health officers, Mr. Phelps concludes that the women of this country do not use more than twenty per cent as much liquor as is used by men. We would, therefore, estimate the effect of liquor on our female population as being only one-fifth as severe as is its effect on the male population; therefore, if 13.2 per cent of all male deaths above the age of 20 result from the use of liquor, 2.6 per cent of all female deaths above the age of 20 would be the result of liquor. Now, there were 209,049 female deaths above 20 years of age in the registration area of the United States in 1908; 2.6 per cent of this number would give us 5,435 as the alcoholic female mortality of the registration area.

Adding the male and female deaths occurring in the registration area we find a total of 38,288 deaths to be the annual harvest of human life in the registration area resulting from alcoholic intemperance.

The next question is: If 38,288 deaths occur in 51.8 per cent of our National population from alcoholic intemperance, how many deaths occur for the whole population from this cause? After making the necessary corrections for the greater fatality of alcohol on urban than on rural populations, and for the difference in the proportion of rual and urban populations in the registration and nonregistration area of the United States it is found that the alcoholic mortality of the nonregistration area is 27,609. This figure, added to the 38,288 deaths occurring in the registration area, makes a total of 65,897 deaths occurring each year in the United States that are chargeable to alcoholic intemperance.

The economic value of the average adult life is estimated by political economists at $4,000. The 65,897 lives destroyed annually by liquor at $4,000 apiece amounts to an annual monetary loss of $263,588,000.

It has been shown that for every unnecessary death there are 700 days of unnecessary sickness. On that estimate alcoholic intemperance produces, in addition to the 65,897 deaths, 46,127,900 days, or 126,377 years, of individual sickness every year in this country.

Liquor is to blame for one out of 12 *adult* deaths.

Liquor is to blame for one out of 10 *male* deaths.

Liquor is to blame for one out of 7.5 *adult male* deaths.

Liquor is to blame for twice as many deaths a year as are caused by typhoid fever.

Liquor is to blame for more deaths in four years than were destroyed in action in the four years of the Civil War.

The liquor problem is a public health problem.

THE LEGAL IMPORTANCE OF BIRTH REGISTRATION

By Elmer W. Ehler, Chief Clerk, Bureau of Vital Statistics, State Dept. of Health, Harrisburg, Pa.

Reasons demanding the registration of births and deaths, stated in increasing order of importance, have been given as follows: (1) Knowledge of the movement of population (demographic uses); (2) protection of the lives and health of the people (sanitary uses), and (3) protection of the rights of the individual and of the community (legal uses).

So far as death returns are concerned, the propriety of this order has been questioned, because in this country the sanitary uses of vital statistics have apparently quite overshadowed their importance as legal records. Modern public health administration is largely dependent upon reliable mortality statistics, and this "Sanitary Era" which is yearly witnessing greater triumphs in the conquest of disease, had its inauguration in the beginning of national registration of births and deaths in England in 1836.

Nevertheless, the registration of vital statistics was not primarily instituted for purposes of public health, but to secure proper records of the vital events of human life for legal purposes, and in the long run this is perhaps the most important service performed by a system of governmental registration. The neglect of birth registration in the United States, which has resulted in a one-sided development of vital statistics, is partly due to the fact that for sanitary purposes the registration of deaths has until very recently been considered more important than the registration of births, and hence the latter has been seriously neglected. The growing recognition of the child, its rights and its conservation, is rapidly reversing this attitude.

The frequent necessity of legal proof of birth is the best evidence of importance. In an enlightened community there live but few people of mature age whose birth does not at some time become a matter for the cognizance and consideration of legal authorities. The attainment of majority, with its rights and duties, the inheritance or conveyance of property, parentage, nationality, place, date of birth and many other questions of a sociological, or even historical, character often assume much importance with reference to many of our citizens.

Some instances in which the evidence furnished by an accurate registration of births may prove to be of the greatest value are found in questions of descent, not only under the intestate laws of the various states of the Union, but also under provisions in wills; the usual limitation being to a trustee to pay over the interest or profits until the arrival of the *cestui que* trust at his or her legal majority. The termination of the trust, the settlement of the trustee's account, the auditing thereof, and the payment over to the beneficiary absolutely are all dependent upon the proper proof of the attainment of majority. The trustee may have the interests of several minors under his supervision. Each of same may have different guardians, in which case the relations of the guardians and their wards are terminated upon proof of the acquirement of legal age. Estates have even been given upon condition that the heir remain unmarried until the attainment of majority or of a fixed age, upon breach of which condition the state was to go over to other persons; or upon condition that the taker shall marry before the attainment of a fixed age. In all of the foregoing the rights of the parties interested are made to depend upon the proof of the correct age of one of the persons, in other words, upon the proof of birth. It is universally held that minors are not liable upon their contracts. The plea of infancy has perhaps been the basis of loss to a large number of commercial institutions in suits upon contracts of various kinds. It is true that the mere setting up of such a plea in order to avoid liability in most cases is indicative of untrustworthiness, yet the establishment of infancy at the time of making the contract and failure to ratify same after majority is a sufficient defense. In Pennsylvania it has even been held that a minor is not liable for his torts growing out of a contract.

In a large number of states an age is fixed below which youthful criminals are entitled to be tried for their offenses in private courts styled "Juvenile Courts." If they exceed the age limit they are relegated to the public courts where adult confirmed criminals are dealt with. If the age requirements are fulfilled so far as the execution of the sentence is concerned, they are entitled to be placed in a reformatory instead of a penitentiary. The importance of a wayward child securing these benefits can not be overestimated. The state, however, considering the salutary effects of such treatment upon youthful minds, has not deemed the burden of the expenditure necessitated by such special trials and schooling warranted beyond a fixed age. The date of birth is the determining feature here, as well as in the settlement of insurance and pensions. Under Section 4703, Revised Statutes of the United States, widows' pensions were increased from and after July 25, 1866, at the rate of two dollars per month for each child under the age of sixteen years of the husband on account of whose death the claim for pension was made, under the conditions therein provided. Section 4706 gives the legitimate minor children of a soldier or sailor whose death resulted from a disability incurred while in the military or naval service of the United States, and in the line of duty since March 4, 1861, a pension in his or her own right, in cases where the soldier left no widow surviving, or where the widow died, remarried or was otherwise deprived of a pensionable status before the child attained the age of sixteen. The act of June 27, 1890, provides, in part, for the continuation of pension or increase of pension granted in behalf of a child under sixteen years of age who, when that age was attained, was insane, idiotic, or otherwise permanently helpless, to continue during the life of said child or the period of its disability. These laws render necessary the best evidence of the date of birth of a given child in whose behalf increase of pension or pension is claimed.

Foreign governments require in a number of instances certified copies of birth certificates showing parentage, residence and other data bearing upon legacies or descent of property. In procuring marriage licenses the matter of consent of parent or guardian is dependent upon the age of the contracting parties. The exercise of franchise, the right to serve upon juries, service in the militia, admission to practice in the different profesions and constitutional requirements as to ages of holders of public office, all render necessary proof of age.

Age requirements are also found in the admission of children to schools, and in the regulation of child labor. In certain criminal cases the burden of proof is shifted because of the establishment of a certain age of the defendant, the general common law rule being that below the age of seven an irrebuttable presumption of incapacity exists. The incapacity here refers to the mental state necessary to understand the crime committed or to form the legal intent. Between the ages of seven and fourteen a rebuttable presumption of incapacity arises. Above the age of fourteen the presumption is that defendant has criminal capacity, and the burden is upon him to rebut the presumption. By statute age limits are fixed below which females are held to be unable to consent to intercourse. The further enumeration of instances of this kind would merely be a work of supererogation.

It is very evident, however, that the private interest of the citizen in the proof of his birth is greatly enhanced upon the realization that a great proportion of his privileges and immunities, rights and duties turn upon the question of his age. The increasing density of population and consequent sharpened struggle for existence will make these hitherto matters of minor significance acquire a much greater importance.

Courts have always insisted upon the proof of facts by the best evidence obtainable. This has given rise to the general principle forbidding the admission of hearsay evidence. Exceptions to this rule are permitted, but only on the ground of necessity or extreme inconvenience. There is no generally accepted and uniform principle, even within each exception, still there is this general notion that for the exception to exist at all there must be some kind of a necessity for the reception of hearsay assertions. In old English cases of pedigree, declarations of servants, and even of neighbors, have been admitted. But later the law resorted to hearsay evidence in cases of pedigree upon the ground of related interest of the declarants in the person from whom descent is made out, and their consequent interest in knowing the connections of the family. The rule of admission being restricted to the declarations of deceased persons who were related by blood or marriage to the person, and, therefore, interested in the succession in question; and general repute in the family from the testimony of a surviving member. Testimony as to one's own age is regarded as in effect testimony to the family reputation, the reputation being admissible under the present exception, this line as to age being drawn at relatives and family members, although in some of the state courts declarations from intimate acquaintances have by several judges been thought admissible. Even reputation in the neighborhood as to age under certain local conditions has been held admissible. The term pedigree embraces not only descent and relationship, but also the facts of birth and marraige and death, and the times when these events happened. The form of the declaration was sometimes an entry by a deceased parent or other relative made in a Bible, family missal or any other book, or in any document or paper stating the fact and date of the birth, but it was, nevertheless, regarded as a declaration of such parent or relative in a matter of pedigree. Correspondence of deceased members of the family, inscriptions on tombstones and other funeral monuments, engravings on rings, inscriptions on family portraits and charts have also been resorted to.

This form of pedigree evidence was the only form that could be used in the most important controversies where the question was whether a certain line of genealogy could be stablished, and was first confined to such cases. It afterwards was extended, and became of use in ejectments from land, pleas of infancy to a promissory note, suits for amounts of life insurance policies, prosecutions for serious offenses upon those under the age of consent, selling liquor to a minor, penalty for marrying a minor and other proceedings, civil and criminal.

The availability of this kind of evidence was always uncertain. Rights and privileges were placed in jeopardy and entirely lost by the lack thereof. Even when available, its untrustworthiness from failure of correct memory was apparent. Some instances occurred at the Pension Bureau, where applicants for widows' pensions found it impossible to establish dates of birth of alleged minors for whom increase was claimed, with the result of an adjudication of their title to a pension *per se*, and the holding in abeyance of the increase, which was never received, owing to a failure to submit the proper proof.

What constitutes the best evidence concerning a birth as to time, place and parentage? This question is best answered by the principles established in appraising the value of evidence in certain civil actions. When a contract is reduced to writing for the purpose of perpetuating and definitely fixing the terms thereof, it is held that the best evidence of the contract is the writing itself. For the purpose of preventing frauds some contracts are expressly required to be in writing by statute. Therefore, the best evidence of the facts concening a birth is a compulsory written public record made at the time of birth, or very soon thereafter, by the person in attendance, or by the parents themselves. In order to insure efficiency and thoroughness of course, there should be a penalty for the failure to comply with the requirements as finally established. The child is incapable of protecting its future interests at this time, and the record must of necessity be made by some other person. The personal interests of the child, helpless within itself, demand such a record, and is ample justification for compulsory birth registration. The Registration Act of 1851, of Pennsylvania, even though not enforced, still adequately and excellently gave reasons in its preamble for the passage of efficient registration laws, as follows:

> "WHEREAS. From the death of witnesses and from other causes it has often been found difficult to prove the marriage, birth or death of persons, whereby the rights of many have been sacrificed and great wrongs have been done; and,
>
> "WHEREAS. Important truths, deeply affecting the physical welfare of mankind, are to be drawn from the number of marriages, births or deaths that during a term of years may be contracted, or may occur within the limits of this extensive commonwealth; therefore," etc.

It is not proposed to touch upon the practical value of complete, accurate and uniform records of births to statisticians and students of sociological problems, but to comment merely upon the practical value of same in the ordinary relations of life. The legal benefits of birth registration are dual in character. First, in perpetuating evidence safeguarding the civil rights of individuals. The birth certificate definitely fixing place, date of birth, parentage, etc. Second, in assembling information which every state must possess in order to legislate wisely for the needs of its future citizens. If a state or nation desires to anticipate the needs of succeeding generations, and to legislate with wisdom as to their requirements, it must know how great its future population is to be, and from what sources it is to be recruited. This knowledge necessary to direct the lines of progress and to weld the state to society can only be gained through effective registration laws. Such laws have been held to be constitutional, and the methods of their enforcement well defined.

Our nation is duty bound to protect the rights of person or property of its citizens upon the high seas or abroad, even to the extent of force of arms. It should in such extremity, however, have the best and most positive evidence of the birthplace, date of birth and parentage of such subject to insure it that as a citizen such person should be protected. In the absence of birth registration, there is better legal evidence of the citizenship of naturalized foreign born than of our own native people.

Our government is said to be a government of the people, by the people and for the people. It records the vital events of its political history, and they are taught to its coming citizens through the medium of its public schools, with the hope that the achievements and examples of the patriots who have emblazoned the horizon of political liberty with a succession of events establishing and perpetuating a great nation will be emulated. Is it not equally fitting and important that the vital events in the lives of those who are its people should be properly recorded? No government can fulfill its obligation of social service to its people which ignores the records of their existence. Its very existence depends upon the allegiance of its citizens. Its humblest citizen should at least in return be entitled to have recorded by his sovereign power his entrance and his exit from its political life. His very birth carries with it the obligation of certain duties owing to his government, even to the extent of bearing arms and giving up his life in order that his government might continue to exist. To his government, as well as to himself, his birth is equally vital. How eminently important is it, therefore, that each state record the vital events in the lives of its citizens, their births, as well as their deaths, to the end that these United States may demonstrate to the fullest degree that the greatest function of all government is the recognition of personal rights, as well as personal liberty.

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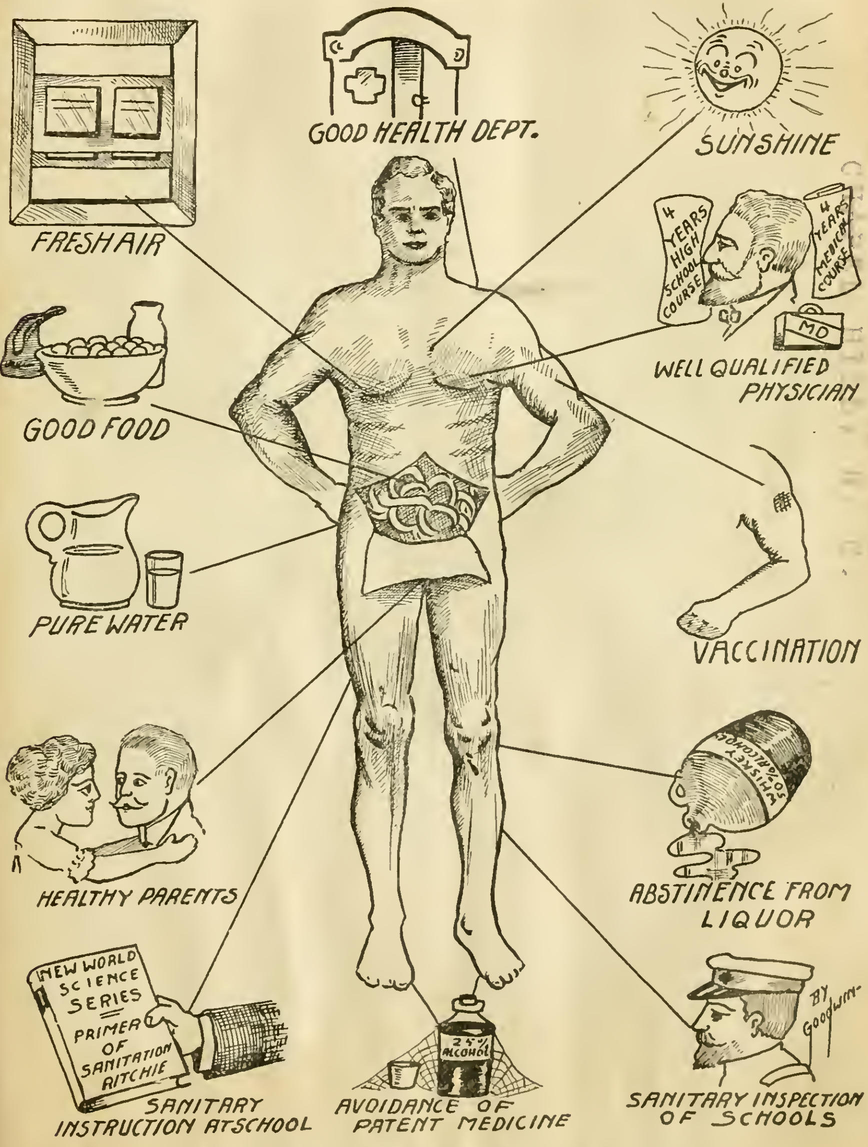

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At What Ages We Die.

Under 1 year	19.38 per cent of all deaths.
Between 1 and 2 years	4.24 per cent of all deaths.
Between 2 and 3 years	1.87 per cent of all deaths.
Between 3 and 4 years	1.18 per cent of all deaths.
Between 4 and 5 years	.86 per cent of all deaths.
Between 5 and 10 years	2.46 per cent of all deaths.
Between 10 and 15 years	1.59 per cent of all deaths.
Between 15 and 20 years	2.68 per cent of all deaths.
Between 20 and 25 years	4.07 per cent of all deaths.
Between 25 and 30 years	4.42 per cent of all deaths.
Between 30 and 35 years	4.40 per cent of all deaths.
Between 35 and 40 years	4.68 per cent of all deaths.
Between 40 and 45 years	4.53 per cent of all deaths.
Between 45 and 50 years	4.59 per cent of all deaths.
Between 50 and 55 years	4.84 per cent of all deaths.
Between 55 and 60 years	4.93 per cent of all deaths.
Between 60 and 65 years	5.58 per cent of all deaths.
Between 65 and 70 years	5.85 per cent of all deaths.
Between 70 and 75 years	5.80 per cent of all deaths.
Between 75 and 80 years	5.15 per cent of all deaths.
Between 80 and 85 years	3.76 per cent of all deaths.
Between 85 and 90 years	1.98 per cent of all deaths.
Over 90 years	1.16 per cent of all deaths.

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FOREWORD

The Virginia health authorities for the last two years have issued their January bulletin in the form of a Health Almanac. How much we think of this idea is evidenced best by the fact that in this our January issue we are following Virginia's good example. Of course, we should rather lead than follow, but when one places such a high value on originality that his pride gets between him and a good thing, he is more proud than wise.

This BULLETIN, as you will observe, has a hole for a string in the upper corner. It is earnestly hoped that every copy will be hung on a nail within easy reach of one of the calks in the horse shoe of the family circle about the fireside. We venture to hope that this almanac, when hung upon that nail, will not be made the companion of some patent medicine almanac. The two are not naturally companionable; their ideals are as far apart as truth and fraud, or as altruism and selfishness.

We have tried to crowd into the space of this BULLETIN all the essentials of a good almanac. In addition to the principal features of an almanac this one contains: (a) Important dates with especial reference to North Carolina events, and to medical and sanitary diiscoveries; (b) the legal holidays observed in North Carolina; (c) sanitary jokes, others carefully excluded; (d) health forecasts; (e) the important things for the farmer to do during each month's calendar; (f) household remedies for common ailments and minor injuries; (g) the year's health program, including the twelve most important aspects of the health problem—one for each month—for a good citizen to think about.

To the *Progressive Farmer,* for supplying us with a list of things that the farmer should do each month of the year, we are under lasting obligations. We wish also to acknowledge our deep indebtedness to Mr. R. D. W. Connor, Secretary of the North Carolina Historical Commission, for furnishing us with the most important dates in North Carolina History, a feature of this almanac that, in itself, will make it of great value to students of our State's history.

The Wealth of Years and the Health of Youth.

A young man with dejected mien sauntered down the street to a bank to renew a small note, wondering and worrying the while about where he would finally secure the small amount necessary to relieve his indebtedness. Suddenly, as if somebody or something had said cheerily, "Good morning," he lifted his downcast eyes and saw, on the opposite side of the street, the wealthiest man in the little town, a man who could write his check for one hundred thousand or five hundred thousand dollars if he wanted to, who was the largest stockholder in the bank to which he was going, and who lived in the fine house on the corner. How lucky! Oh, if I were in your shoes, I would not have even a speaking acquaintance with care, thought the envious borrower. Whereupon his aged friend addressed him, not in words but in the older sign language, after this manner: "Envious one, see, too, my hair with the frost that foretells approaching winter, see the little stoop in the shoulders as life begins to bow itself off the stage of action, and see the slight shuffle in my gait as the declivity grows ever steeper to my tired feet, and consider our relative fortunes. You have a relish instead of a satiated appetite for the good things of the world, you have opportunity reserved instead of opportunity spent, you have a chance to see the kick-off instead of knowing the finished score, you have decades instead of years, vigor instead of enfeeblement, health instead of incipient disease, life ahead instead of life past."

As the young man passed on with face uplifted, he reasoned to himself that the words that he had heard were those of wisdom, and that the years of youth, even though they carry nothing more than health, were worth all that time could pile up in the lap of age.

Moral: He who has health has the key to all wealth.

"Mrs. Baye is simply mad on the subject of germs, and sterilizes or filters everything in the house."

"How does she get along with her family?"

"Oh, even her relations are strained."—*Texas State Board of Health Bulletin.*

A Story: No Man Lives Unto Himself.

[The fundamental facts of this story are true, but the writer knows neither the name of the family nor their address.]

Several years ago there lived on a large and beautiful estate near a flourishing city a farmer of wealth and influence. With his good wife, two strong, handsome sons, and a beautiful daughter, and all that makes life pleasant, he was at peace with the world about him.

One day a man, known throughout the community for his public spirit and foresight, called to see the farmer. He told the farmer that there was pending in the legislature a bill that would do much to relieve the people of unnecessary sickness if enacted into law, and that the active support of the representative from their county, whose election was largely due to the farmer's influence, would pass the bill. The farmer told his visitor that he had not had time to keep up with "all this health agitation"; and besides it was a matter that did not espe-

1st Month. JANUARY, 1913. 31 Days

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	We	New Year's Day. Start the year right.	7 10	4 59	1 40
2	Th	Andrew Ure, chemist, died, 1857.	7 10	5 0	2 52
3	Fri	Ventilate—don't hibernate. Fresh air is cheap.	7 10	5 1	3 59
4	Sat	Gov. David L. Swain of North Carolina born, 1808.	7 10	5 1	5 5
5	Su	Benj. Rush born, 1745. Don't spit.	7 10	5 2	6 8
6	Mo	Epiphany. Too much fresh air is just enough.	7 10	5 3	7 4
7	Tu	Don't make a junk shop of your stomach.	7 10	5 4	sets
8	We	Galileo died, 1642	7 10	5 5	5 59
9	Th	No spit—no consumption.	7 10	5 6	7 0
10	Fri	Linnaeus died, 1778. Get vaccinated.	7 10	5 6	8 3
11	Sat	Sir Hans Sloane, father of British Museum, died, 1753.	7 9	5 7	9 3
12	Su	Lavater died, 1801. Swat all stray flies.	7 9	5 8	10 5
13	Mo	The best disinfectants—sunshine, soap and hot water.	7 9	5 9	11 1
14	Tu	To avoid colds, keep your feet dry and warm and ventilate.	7 9	5 10	morn
15	We	Fall of Fort Fisher, 1865.	7 9	5 11	0 2
16	Th	Cough and sneeze on the Q. T. Get behind a handkerchief.	7 9	5 12	1 5
17	Fri	Benjamin Franklin born, 1706.	7 8	5 13	2 11
18	Sat	When you don't know what to eat—eat nothing.	7 8	5 14	3 18
19	Su	Septuagesima. Lee's birthday. Paul Revere's ride.	7 8	5 15	4 27
20	Mo	Avoid patent medicines as you would a pestilence.	7 8	5 15	5 34
21	Tu	Wash your neck—inside.	7 7	5 16	6 39
22	We	Wilmington captured by the Federal Army, 1865.	7 7	5 17	rises
23	Th	William Gaston died, 1844.	7 6	5 18	6 34
24	Fri	Edward Hyde, first Governor of North Carolina as a separate province from South Carolina, appointed, 1712.	7 6	5 19	7 53
25	Sat	Air your home thoroughly every day.	7 5	5 20	9 9
26	Su	Sexagesima. Jenner, discoverer of vaccination, died, 1823.	7 4	5 21	10 18
27	Mo	J. J. Audubon died, 1851.	7 3	5 22	11 30
28	Tu	Cuban independence, 1909. Patronize the clean grocer.	7 3	5 23	morn
29	We	Philadelphia nuisance ordinance, 1818.	7 2	5 24	0 43
30	Th	Cheap candy, expensive funeral. Why take chances?	7 2	5 25	1 52
31	Fri	Sunshine—God's best germ destroyer.	7 2	5 26	2 59

MOON'S PHASES.

	D	H	M			D	H	M	
● New Moon,	7	5	14	morning	Full Moon,	22	10	26	morning
☽ First Quarter,	15	10	48	morning	☾ Last Quarter,	29	2	20	morning

SIX THINGS TO DO ON THE FARM IN JANUARY.

1. Take an inventory; see what you are worth; find out what you have on hand that you do not need and arrange to dispose of it; find out what you need in the way of equipment for economical farming and arrange to get it if possible.
2. Look after the live stock and poultry to see that they are comfortable and doing well; be sure especially that there are no lice on either.
3. Clear out the stumps, bushes and briers; get rid of needless ditches and terrace banks.
4. Start the garden; give it a coat of manure and plant the early hardy crops.
5. Take care of the manure; get it out on the fields as early as possible.
6. Get a good book on fertilizers and soil fertility and study this matter just as a boy studies a lesson in school; it will be as profitable work as you ever did.

cially interest him. He had lived there twenty-five years and never had a case of fever or ague developed on his place, and there was not a death from consumption on either side of his family as far back as he could remember. Let those who were exposed to disease, whom the bill really concerned, see that it passed; it was their business, not his.

A few days later the papers said that the health bill, after a hard fight, had been defeated by only two votes.

Six years have elapsed since the health bill was killed. Only three of the farmer's once happy family are left. The two sons have died within the past summer from typhoid fever, the mother is in a sanatorium being treated for nervous exhaustion, brought on by grief over the loss of her boys. The daughter recovered, but is partially paralyzed.

The following are the circumstances of the terrible tragedy that took place in the once happy home: In the early spring a dairyman supplying milk to the neighboring city went on an excursion to a city in a distant part of the state where, at the time, there was a considerable amount of typhoid fever. Within three weeks after his return he was in bed with a severe attack of the disease. His wife, who did much of the nursing, had to see that the milk was properly bottled and delivered. One day when she was very busy and worrying about her husband's condition she neglected to disinfect her hands before handling the milk. Within two weeks an epidemic of fever in the town supplied with the milk was on. These are the circumstances that government experts, who studied the epidemic, assigned as its explanation. About six weeks after the epidemic had started a negro man, who had just lost his wife from typhoid fever, hired himself to the farmer. This man was employed much of his time about the barn and frequently did the milking. After ailing for two or three weeks this hired man finally took his bed with what turned out to be a very severe attack of typhoid fever. Shortly after this the daughter and both sons of his employer came down with the disease, from which the boys never recovered, and the daughter only partially recovered. The doctor said that they got the disease through the milk the hired man had handled, and that he brought the disease from the neighboring city.

A careworn man had learned, at an incalculable cost, one of the great lessons of his time. It was all perfectly clear now how an epidemic in a distant city had lighted up an epidemic in a neighboring city and from that had spread to his own home.

Moral: The health of an individual is a part of, and dependent upon, the health of the community; the health of the community is a part of, and dependent upon, the health of the county; the health of the county is a part of, and dependent upon, the health of the state.

A Good Citizen.

A surgeon in a western town, engaged to perform an operation of minor character upon a somewhat unsophisticated patient, asked him if he were willing to have only a local anesthetic.

"Sure," replied the other, "I believe in patronizing home industry whenever you can."—*Texas State Board of Health Bulletin.*

2nd Month. FEBRUARY, 1913. 28 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun Rises	Sun Sets	Moon Rises or Sets
1	Sat	Americans under Gen. Davidson defeated and Davidson killed at Cowan's Ford by British under Gen. O'Hara, 1781.	7 1	5 27	4 1
2	Su	Quinquagesima. Don't be a groundhog. Come out every day.	7 0	5 28	4 58
3	Mo	Calvin H. Wiley, first Superintendent of Public Instruction in North Carolina, born, 1819.	7 0	5 28	5 50
4	Tu	Shrove Tuesday. Have you been vaccinated?	6 59	5 29	6 32
5	We	Ash Wednesday. Galvani died, 1799.	6 58	5 30	7 6
6	Th	Pasteur denies spontaneous generation, 1860.	6 58	5 31	sets
7	Fri	Stamp Act passed by British Parlaiment, 1765.	6 57	5 32	6 54
8	Sat	A large pock on the arm beats smallpox on the face.	6 56	5 33	7 56
9	Su	Measles often paves the way for consumption.	6 55	5 34	8 53
10	Mo	Typhus fever in New York, 1892.	6 54	5 35	9 52
11	Tu	Wake Forest College founded, 1834.	6 53	5 36	10 54
12	We	Lincoln's birthday. First student to enter the University arrived at Chapel Hill, 1795.	6 53	5 37	11 58
13	Th	It is criminal to expose children to whooping cough.	6 52	5 38	morn
14	Fri	St. Valentine's Day.	6 51	5 39	1 3
15	Sat	Ember Day. Don't spit on the floor.	6 50	5 40	2 10
16	Su	Eleven deaths result from measles to one from smallpox.	6 49	5 41	3 16
17	Mo	Cad Colden, American physician, born, 1688.	6 48	5 42	4 18
18	Tu	Richard H. Lewis, Secretary North Carolina State Board of Health, born, 1850.	6 47	5 43	5 16
19	We	James Davis, first printer in North Carolina, appointed public printer to the province, 1754.	6 46	5 44	6 4
20	Th	Food left between the teeth ferments and produces decay.	6 44	5 45	rises
21	Fri	Armed resistance to the landing of British stamps at Brunswick, 1766.	6 43	5 46	6 41
22	Sat	Washington's birthday.	6 42	5 47	7 57
23	Su	Thomas Fanning Wood, first Secretary of the State Board of Health, born at Wilmington, 1841.	6 41	5 48	9 9
24	Mo	Henry Cavendish, physicist, died, 1810.	6 40	5 48	10 25
25	Tu	Eat in a hurry—die in the same way.	6 39	5 49	11 39
26	We	Patent medicines never cure consumption.	6 38	5 50	morn
27	Th	Battle of Moore's Creek Bridge, 1776.	6 38	5 51	0 50
28	Fri	North Carolina voted against calling a convention to carry the state out of the Union, 1861.	6 37	5 51	1 56

MOON'S PHASES.

	D	H	M		D	H	M
🌑 New Moon,	6	0	8 morning	🌕 Full Moon,	20	8	49 evening
🌓 First Quarter,	14	3	20 morning	🌗 Last Quarter,	27	4	1 evening

SIX THINGS TO DO ON THE FARM IN FEBRUARY.

1. Buy your seeds, both farm and garden.
2. Get to work in the garden; manure and fertilize it; plant hardy crops, peas, radishes, onions, lettuce, potatoes, etc., outdoors; sow tomatoes, pepper, eggplant seed in hotbeds or boxes.
3. Prune the fruit trees; clean all trash out of the orchard; spray with lime-sulphur.
4. Look after the poultry houses; set the incubator or some hens; order needed stock and eggs.
5. Fix up about the house; plant shrubs; topdress the lawn; fix up the yard and garden fences.
6. Go into the kitchen and study it for a while; see what labor-saving equipment your wife needs, and then get it for her.

The Health of the State.

HOW NORTH CAROLINA'S HEALTH COMPARES WITH THAT OF THE AVERAGE STATE.

Health is a relative term. When we speak of a healthy man we do not mean a man who is *perfect* physically; we mean a man whose vital condition compares favorably with that of the average man. Likewise, the standard of community, county, or state health is the health conditions of the average community, county, or state. The health of divisions of society is indicated in death rates [crude death rates, that is, the number of deaths from all causes *per* 1000 of the population, and special death rates, that is, the number of deaths from each cause of death *per* 100,000 of population], as the health of an individual is indicated in the quality of pulse, respiration, appetite, and other vital phenomena.

DEATH RATES OF NORTH CAROLINA AND DEATH RATES OF REGISTRATION AREA* OF THE UNITED STATES.

Causes	In Registration Area N. C., 1911	In Registration Area U. S., 1911	Excess
Total	18.4	15.0	3.4
Tuberculosis	248.2	160.3	87.9
Pneumonia	189.6	147.7	41.9
Typhoid Fever	68.0	23.5	44.5
Diarrheas (under 2 years)	178.6	100.8	77.8
Malaria	23.4	†2.2 ‡45.5	----
Whooping-cough	32.2	11.4	20.8
Measles	6.1	12.3	----
Scarlet Fever	2.1	11.6	----
Diphtheria	11.2	21.4	----

*Comprises 55% national population and embraces twenty states. †For the United States. ‡Estimated for the South.

ESTIMATED* TOTAL DEATHS IN NORTH CAROLINA, 1911.

Causes	Occurring	Would Occur with Average Death Rate	Excessive	Credit
All causes	42,040	33,563	8,477	----
Tuberculosis	5,658	3,587	2,071	----
Pneumonia	4,322	3,305	1,017	----
Typhoid Fever	1,551	526	1,025	----
Diarrheas (under 2 years)	4,070	2,255	1,815	----
Malaria	532	----	----	----
Whooping-cough	736	255	481	----
Measles	141	275	----	134
Scarlet Fever	49	260	----	211
Diphtheria	257	479	----	222

*One-sixth of State is under law requiring all deaths to be registered; estimate is six times the number registered in State Registrar's Office.

3rd Month. MARCH, 1913. 31 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun Rises	Sun Sets	Moon Rises or Sets
1	Sat	St. David's Day. Clean up and keep clean.	6 34	5 53	2 55
2	Su	Texan Independence.	6 32	5 56	3 47
3	Mo	C. L. von Buch, geologist, died, 1853.	6 30	5 57	4 32
4	Tu	If you never have measles, you'll never miss it.	6 28	5 58	5 9
5	We	Commissioners of Virginia and North Carolina met to run the boundary line between the two colonies, 1728.	6 26	5 59	5 39
6	Th	If you want smallpox, don't get vaccinated.	6 24	6 0	6 3
7	Fri	Don't take medicine for sleeplessness—take a bath.	6 23	6 1	sets
8	Sat	Bath, first town in North Carolina, incorporated, 1705.	6 22	6 1	6 50
9	Su	Are you dull and stupid? Take a big dose of fresh air.	6 20	6 2	7 45
10	Mo	Davidson College incorporated, 1837.	6 18	6 3	8 47
11	Tu	You can't buy good health at the drug store.	6 17	6 4	9 50.
12	We	J. F. Daniell, chemist, died, 1845.	6 16	6 5	10 54
13	Th	Jos. Priestly born, 1733.	6 14	6 6	11 59
14	Fri	Paul Ehrlich born, 1854.	6 13	6 7	morn
15	Sat	Battle of Guilford Court House, 1781.	6 12	6 8	1 3
16	Su	Palm Sunday. Von Esenbach died, 1858.	6 11	6 9	2 6
17	Mo	St. Patrick's Day.	6 9	6 10	3 4
18	Tu	Lady Montagu's son inoculated for smallpox, 1718.	6 8	6 11	3 55
19	We	4 deaths result from scarlet fever to one from smallpox.	6 6	6 12	4 37
20	Th	Sir Isaac Newton died, 1727.	6 4	6 12	5 11
21	Fri	Good Friday. First day of spring.	6 3	6 13	5 39
22	Sat	Best spring blood medicine—work and laxative diet.	6 2	6 14	rises
23	Su	Easter Sunday.	6 0	6 15	7 58
24	Mo	First charter of Carolina issued by King Charles II, 1663.	5 59	6 16	9 15
25	Tu	Simon Flexner born, 1863.	5 58	6 17	10 30
26	We	Conrad Gesner born, 1516.	5 57	6 18	11 41
27	Th	Robert J. Graves born, 1797.	5 55	6 19	morn
28	Fri	First aid to the dyspeptic—a good laugh.	5 53	6 20	0 45
29	Sat	Theo. Bonet died, 1689. Don't spit.	5 51	6 20	1 43
30	Su	Measles and whooping cough make business for undertakers.	5 50	6 20	2 30
31	Mo	To give other people consumption—spit on their floors.	5 48	6 21	3 9

MOON'S PHASES.

	D	H	M		D	H	M
●New Moon,	7	7	9 evening	○Full Moon	22	6	42 morning
☽First Quarter,	15	3	44 evening	☾Last Quarter,	29	7	44 morning

SIX THINGS TO DO ON THE FARM IN MARCH.

1. Get the land ready for the crops. Plow well; harrow and re-harrow until a perfect seed bed is obtained. Remember that good preparation is half the battle.
2. Use good seeds. It will be cheaper to pay a good price for good seeds than to plant those of poor quality. Then arrange some seed plants and grow your own seeds.
3. Make a start with pure bred poultry. Fix up houses and runways. Rid the premises of lice.
4. Put the spray pump to work in the orchard. Keep up the garden planting and cultivation.
5. Paint the house. Buy a lawn mower and start it running. Whitewash fences and outbuildings.
6. Give the boy an acre to work in corn or cotton, or a calf, or a litter of pigs. Interest the girls in tomato growing or poultry raising.

REGISTRATION STATES IN THE ORDER OF THEIR DEATH RATES.

AVERAGE 15.

1	Washington	10.0	12	Connecticut	15.6
2	Montana	10.6	13	Pennsylvania	15.6
3	Utah	10.8	14	Vermont	16.0
4	Minnesota	10.9	15	Maryland	16.0
5	Wisconsin	12.0	16	New York	16.1
6	California	13.5	17	Massachusetts	16.1
7	Indiana	13.5	18	Maine	17.1
8	Ohio	13.7	19	Rhode Island	17.1
9	Colorado	13.8	20	New Hampshire	17.3
10	Michigan	14.1	21	North Carolina*	18.4
11	New Jersey	15.5			

*North Carolina not accepted by United States Census because of incomplete registration.

DIAGNOSIS: The Old State is Sick.

What She's Doing To Get Well.

PRESENT STATE HEALTH APPROPRIATION.*

	State.	*Total Annual Health Appropriation.*		*State.*	*Annual Per Capita Appropriation.*
1	Pennsylvania	$1,853,740	1	Hawaii	$2.15
2	Porto Rico	500,000	2	Porto Rico	.446
3	Hawaii	411,915	3	District of Columbia	.315
4	Massachusetts	174,900	4	Pennsylvania	.242
5	New York	166,437	5	Nevada	.122
6	Illinois	118,500	6	Florida	.110
7	New Jersey	114,590	7	Montana	.0928
8	District of Columbia	104,440	8	Vermont	.0604
9	Florida	82,500	9	Massachusetts	.0520
10	Minnesota	62,500	10	Idaho	.0494
11	California	60,766	11	New Jersey	.0452
12	Indiana	59,500	12	Utah	.0359
13	Ohio	50,482	13	Colorado	.0331
14	Kansas	43,400	14	Minnesota	.0301
15	Louisiana	40,000	15	Delaware	.0298
16	Maryland	36,500	16	Maryland	.0282
17	Virginia	35,000	17	Rhode Island	.0277
18	Montana	34,900	18	New Hampshire	.0273
19	Oklahoma	30,700	19	California	.0256
20	Georgia	30,500	20	Kansas	.0256
21	Kentucky	30,000	21	Louisiana	.0242
22	Colorado	26,450	22	Oregon	.0223
23	Michigan	25,500	23	Arizona	.0221
24	Alabama	25,000	24	Indiana	.0220
25	Mississippi	25,000	25	Illinois	.0211
26	Missouri	23,650	26	Maine	.0202
27	**North Carolina**	22,500	27	Oklahoma	.0182
28	Vermont	21,500	28	New York	.0182
29	South Carolina	21,220	29	Connecticut	.01795
30	Wisconsin	20,600	30	Virginia	.0171
31	Connecticut	20,000	31	South Carolina	.0140
32	Idaho	16,050	32	Mississippi	.01394

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*Public Health Bulletin No. 54, August, 1912; prepared by direction of Surgeon-General United States Public Health Service.

4th Month. APRIL, 1913. 30 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	Tu	All Fools' Day. Wm. Harvey born, 1578.	5 47	6 22	3 41
2	We	David Ramsey, American physician, born, 1749.	5 46	6 23	4 7
3	Th	Second Provincial Congress of North Carolina met at New Bern, 1775.	5 44	6 23	4 29
4	Fri	Your nose is Nature's dust strainer. Breathe through it	5 42	6 24	4 49
5	Sat	Joseph Lister born, 1827. Get the fresh air habit.	5 41	6 25	5 7
6	Su	Night air is dangerous—if it's last night's air.	5 39	6 26	5 29
7	Mo	Peter Camper died, 1789.	5 38	6 27	sets
8	Tu	Gov. Martin dissolved the General Assembly, the last to meet under authority of the British Crown, 1775.	5 36	6 28	8 47
9	We	Battle of Appomattox, 1865. The last volley was fired by North Carolina troops under Gen. W. R. Cox.	5 35	6 29	9 51
10	Th	Clean up—and keep clean. Swat the fly.	5 34	6 29	10 57
11	Fri	Pennsylvania school inspection law, 1899.	5 33	6 30	11 59
12	Sat	Provincial Congress at Halifax authorized the North Carolina delegates to the Continental Congress to vote for a Declaration of Independence, 1776.	5 31	6 31	morn
13	Su	What we eat today is working and thinking tomorrow.	5 28	6 32	0 59
14	Mo	Lincoln assassinated, 1865.	5 27	6 33	1 51
15	Tu	Cholera in Memphis, 1783.	5 25	6 34	2 35
16	We	Bedbugs are clean, compared with flies.	5 24	6 34	3 9
17	Th	Wear shoes to prevent hookworm disease.	5 23	6 35	3 38
18	Fri	Erasmus Darwin died, 1802. Swat the fly.	5 22	6 36	4 3
19	Sat	Charles Darwin died, 1882. Starve the fly.	5 21	6 37	4 31
20	Su	J. L. Petit, surgeon, died, 1760.	5 20	6 38	rises
21	Mo	S. H. Ware born, 1782.	5 18	6 39	8 4
22	Tu	Constipating foods: White bread, rice, boiled milk, soup, etc.	5 17	6 40	9 19
23	We	Laxative foods: Whole wheat bread, vegetables, fruits, etc.	5 15	6 41	10 28
24	Th	Nice, clean fly! Born and bred in the privy vault! Ugh!	5 14	6 41	11 39
25	Fri	St. Mark. Cholera in India, 1841.	5 13	6 42	morn
26	Sat	Plague in London announced, 1665.	5 12	6 43	0 23
27	Su	First expedition sent out by Sir Walter Raleigh, under Amidas and Barlow, sailed from England, 1584.	5 11	6 43	1 6
28	Mo	A dirty well is more dangerous than a dirty kitchen.	5 11	6 44	1 41
29	Tu	Got your backyard cleaned up? Looks better, doesn't it?	5 11	6 45	2 11
30	We	Louisana admitted, 1812.	5 9	6 46	2 33

MOON'S PHASES.

	D	H	M		D	H	M
●New Moon,	6	0	34 evening	Full Moon,	20	4	19 evening
☽First Quarter	14	0	25 morning	☾Last Quarter,	28	0	55 morning

SIX THINGS TO DO ON THE FARM IN APRIL.

1. Plant cotton and corn—but not until your land is thoroughly prepared, and not until you have secured good seed and seen to it that your planter does perfect work.
2. Plant seed patches of both cotton and corn so as to have good seed of your own next spring.
3. Plant some pasture lots for the hogs, rape early in the month; cowpeas, soy beans and peanuts after the ground becomes thoroughly warm.
4. Look after all the live stock, put them on pasture, but don't cut off the grain feed at once. See that work stock are properly fed, and that all young things are freed from lice.
5. Look after the orchard—spray, plow, fertilize.
6. Screen the house; drain all puddles near it; see that all garbage is removed from about it.

	State.	Total Annual Health Appropriation.
33	Rhode Island	15,000
34	Maine	15,000
35	Oregon	15,000
36	Tennessee	14,700
37	Washington	13,500
38	Utah	13,375
39	Texas	12,000
40	New Hampshire	11,750
41	Nevada	10,000
42	Nebraska	9,240
43	Iowa	8,600
44	Delaware	6,000
45	Arizona	4,500
46	North Dakota	2,700
47	South Dakota	2,000
48	Wyoming	1,500

	State.	Annual Per Capita Appropriation.
	Kentucky	.0131
34	Washington	.0118
35	Alabama	.01173
36	Georgia	.0117
37	Ohio	.0106
38	Wyoming	.01035
39	**North Carolina**	.01021
40	Michigan	.00908
41	Wisconsin	.00884
42	Nebraska	.00774
43	Missouri	.00718
44	Tennessee	.00673
45	North Dakota	.00467
46	Iowa	.00388
47	Texas	.00381
48	South Dakota	.00343

North Carolina, *sixteenth* State in population and *twenty-eighth* State in wealth, should not be the *thirty-ninth* State in *per capita* public health appropriation.

North Carolina spends *one cent* (.01) *per capita* for public health; Cuba, with about the same number of square miles and about the same population as North Carolina, spends *forty-six* cents (.46) *per capita* on public health. North Carolina has a death rate of 18.4 per 1000 of her population; Cuba a death rate of 13 per 1000 of her population. With Cuba's death rate North Carolina would save 18.4—13 or 5.4 lives per 1000 of her population, or 12,912 lives each year. Are not North Carolinians worth as much as Cubans?

The Young Mother and the Fat Hog.

NOT A FABLE; SIMPLY STRAIGHT GOODS.

One time a little mother, who was only twenty-five years old, began to feel tired all the time. Her appetite had failed her for weeks before the tired feeling came. Her three little girls, once a joy in her life, now became a burden to her. It was "Mama," "Mama," all day long. She never had noticed these appeals until the tired feeling came. The little mother also had red spots on her cheeks and a slight dry cough. One day, when dragging herself around, forcing her weary body to work, she felt a sharp but slight pain in her chest, her head grew dizzy and suddenly her mouth filled with blood. The hemorrhage was not severe, but it left her very weak. The doctor she had consulted for her cough and tired feeling prescribed bitters made of alcohol, water and gentian. This gave her false strength for a while, for it checked out her little reserve.

When the hemorrhage occurred she and all her neighbors knew she had consumption, and the doctor should have known it and told her months before.

Now she wrote to the State Board of Health and said: "I am told that consumption in its early stages can be cured by outdoor life, continued rest, and plenty of plain, good food. I do not want to die. I want to live and raise my children to make them good citizens. Where

5th Month. MAY, 1913. 31 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	Th	Ascension. Great Deed of Grant issued by Lords Proprietors regulating land titles in North Carolina, 1668.	5 8	6 47	2 53
2	Fri	God bless the man who first invented screens.	5 7	6 48	3 11
3	Sat	Thomas A. Huxley born, 1825.	5 6	6 49	3 35
4	Su	Wm. P. Dewees, American physician, born, 1768.	5 5	6 49	3 55
5	Mo	Alex. von Humboldt died, 1859.	5 4	6 50	4 19
6	Tu	Johns Hopkins Hospital opened, 1889.	5 3	6 50	sets
7	We	Lavoisier guillotined, 1794. Got your screens up?	5 2	6 51	8 49
8	Th	Gay Lussac died, 1850. Sunshine will keep you young.	5 1	6 52	9 54
9	Fri	Boundary line between North Carolina and South Carolina surveyed, 1765.	5 0	6 53	10 54
10	Sat	Memorial Day. Stonewall Jackson died, 1863.	4 59	6 54	11 48
11	Su	Pentecost. Peter Camper, anatomist, born, 1722.	4 58	6 54	morn
12	Mo	Florence Nightingale born, 1820.	4 57	6 55	0 33
13	Tu	Zebulon B. Vance born, 1830.	4 56	6 56	1 11
14	We	Ember Day. Vaccination first tried, 1796.	4 55	6 57	1 41
15	Th	Charles Wardell Stiles born, 1867.	4 54	6 58	2 6
16	Fri	Ember Day. Edward Jenner born, 1749.	4 53	6 59	2 34
17	Sat	Ember Day. No soil pollution, no hookworm.	4 53	7 0	2 59
18	Su	Trinity Sunday.	4 52	7 1	3 23
19	Mo	A fly in the milk often means a baby in the grave.	4 52	7 1	3 53
20	Tu	Mecklenburg Declaration. North Carolina Convention adopted Ordinance of Secession, 1861.	4 51	7 2	rises
21	We	Cholera in Oxford, 1518. Swat the fly.	4 50	7 3	9 14
22	Th	Corpus Christi. Jonathan Pereira born, 1804.	4 49	7 3	10 12
23	Fri	John Hunter born, 1718.	4 48	7 4	11 0
24	Sat	Gov. Martin, last of the royal governors, fled the province, 1776.	4 48	7 5	11 39
25	Su	J. M. Good born, 1764.	4 48	7 5	morn
26	Mo	Michael Ettmuller born, 1644.	4 47	7 6	0 11
27	Tu	Robert Koch died, 1910. Keep clean.	4 47	7 7	0 36
28	We	North Carolina admitted to the Confederacy, 1861.	4 46	7 8	0 57
29	Th	Plague at Greenwich, 1603.	4 46	7 9	1 16
30	Fri	Federal Memorial Day.	4 45	7 10	1 36
31	Sat	Boers surrendered, 1902. Swat the mosquito.	4 45	7 11	1 58

MOON'S PHASES.

	D	H	M		D	H	M
● New Moon,	6	3	10 morning	○ Full Moon,	20	2	4 morning
◑ First Quarter,	13	6	31 morning	◐ Last Quarter	27	6	50 evening

SIX THINGS TO DO ON THE FARM IN MAY.

1. Keep the cultivators going. Stay ahead of the grass by using harrows and weeders. Keep land level and surface thoroughly fined.
2. See that the boys and girls have a share in the farm work. If the boys have not a corn or cotton acre, give them a pig or a calf. Interest the girls in tomato growing or poultry raising.
3. Look closely after the health of the chickens. Use disinfectants and whitewash freely. Market the early cockerels as soon as large enough.
4. Keep on spraying. Use Bordeaux and Paris green on apple trees and Irish potatoes, Bordeaux on grapes and tomatoes, self-boiled lime-sulphur to prevent peach rot.
5. Fix up the kitchen for hot weather. See that the screens are in good working order. Make or buy a fireless cooker or get an oil stove. Arrange to keep milk and butter cool.
6. Keep the grounds about the house in order. Use the lawn-mower. Keep chickens and pigs out of the yard. Screen in one of the porches for a resting place.

can I go to get well?" The reply was: "The great Christian State of Indiana has not yet risen to the *mighty economy* of saving the lives of little mothers from consumption. At present, the only place where you can go is a grave. However, the State will care for your children in an orphan asylum after you are dead, and then in a few years a special officer will be paid to find a home for them. But save your life —NEVER. That is a cranky idea," for a member on the floor of the Sixty-fifth Assembly said so. "Besides," said he, "it isn't business, the State can't afford it." So the little mother died of the preventable and curable disease, the home was broken up and the children were taken to the orphan asylum.

A big fat hog one morning found he had a pain in his belly. He squealed loudly and the farmer came out of his house to see what was the matter. "He's got the hog cholery," said the hired man. So the farmer telegraphed Secretary Wilson of the U. S. Agricultural Department (who said the other day he had 3,000 experts in animal and plant diseases), and the reply was: "Cert., I'll send you a man right away." Sure enough the man came. He said he was a D. V. S., and he was, too. He had a government syringe and a bottle of government medicine in his handbag, and he went for the hog. It got well. It wasn't cranky for the government to do this, and it could afford the expense, for the hog could be turned into ham, sausage, lard and bacon.

Anybody, even a fool, can see it would be cranky for the State to save the life of a little mother, and it could not afford it, either.

Moral: Be a hog and be worth saving.

[The background of this story is laid in Indiana, but its truth applies with equal force to our own State. For while Indiana is spending $59,500 annually on her public health, North Carolina is spending the extravagant sum of $22,500 annually on our public health.]

Health Rules interpreted by the guests:

"Rule A. After rising take a long walk on an empty stomach."

Rieffler: "Whose?"

"Anyone's."

A Pound of Cure and an Ounce of Prevention.

North Carolina spends about $550,000, annually, for the care of her defectives—the deaf, the dumb, the blind, and the insane. Well and good, every dollar of it is needed and is wisely used.

North Carolina spends $22,500 annually to prevent disease, death, and defectives. As this latter fund is increased, wise sanitary administration should decrease the expense of caring for defectives.

At present we are spending about $25 for cure to $1 for prevention.

An old gentleman walked up to a pretty girl attendant at the counting room of a daily newspaper office a few days ago, and said:

"Miss, I would like to get copies of your paper for a week back."

"You had better try porous plasters," she abstractedly replied. "You can get them just acoss the street.—*Texas State Board of Health Bulletin.*

6th Month. JUNE, 1913. 30 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	Su	Kentucky admitted, 1792.	4 44	7 11	2 21
2	Mo	Bathe thirty times this month.	4 44	7 11	2 46
3	Tu	Tennessee admitted, 1796. Wm. Harvey died, 1657.	4 43	7 12	3 19
4	We	Convention for revising the Constitution met in Raleigh, 1835.	4 42	7 12	4 1
5	Th	James Carroll born, 1854. Screen the kitchen.	4 41	7 13	sets
6	Fri	Arkansas admitted, 1836. Screen the dining room.	4 41	7 13	9 42
7	Sat	James Young Simpson born, 1811.	4 41	7 14	10 31
8	Su	Sir Thomas Drake anchored his fleet off Roanoke Island, 1585.	4 41	7 14	11 12
9	Mo	First aid to the dyspeptic—a good laugh.	4 41	7 15	11 44
10	Tu	Battle of Bethel, 1861. Henry L. Wyatt killed; first Confederate soldier to fall in the Civil War.	4 41	7 15	morn
11	We	A little tin can may breed a host of mosquitoes.	4 41	7 16	0 11
12	Th	Robert Brown died, 1858. Starve the fly.	4 41	7 16	0 34
13	Fri	Simon A. Tissot died, 1797.	4 41	7 16	1 3
14	Sat	What you eat today is working and thinking tomorrow.	4 41	7 17	1 26
15	Su	Avoid the public drinking cup. It spreads disease.	4 41	7 17	1 53
16	Mo	A filling in time saves a tooth—and a digestion.	4 41	7 17	2 27
17	Tu	William Hooper, signer of the Declaration of Independence for North Carolina, born in Boston, 1742.	4 41	7 18	3 8
18	We	Swat all flies that get into the house.	4 41	7 19	rises
19	Th	Nicholas Lemery died, 1715.	4 42	7 19	8 52
20	Fri	William R. Davie born, 1756.	4 42	7 19	9 36
21	Sat	Summer begins. Capitol at Raleigh burned, 1831.	4 43	7 19	10 9
22	Su	Longest day in the year.	4 43	7 19	10 37
23	Mo	Cholera in New York, 1832.	4 43	7 19	11 0
24	Tu	St. John Baptist.	4 43	7 19	11 20
25	We	Gov. Wm. Tryon proclaims repeal of the Stamp Act, 1776.	4 43	7 19	11 35
26	Th	Tubercular dairy cows are a menace to the public.	4 43	7 19	morn
27	Fri	Dr. Elisha Mitchell perished while exploring the top of Mt. Mitchell, 1857.	4 43	7 20	0 1
28	Sat	The first summer boarder—the typhoid fly.	4 44	7 20	0 21
29	Su	St. Peter and St. Paul. Nathaniel Macon died, 1837. Thomas Huxley died, 1895.	4 44	7 20	0 44
30	Mo	Second charter of North Carolina issued by King Charles II, 1665.	4 44	7 20	1 15

MOON'S PHASES.

	D	H	M		D	H	M
🌑New Moon,	4	2	43 evening	🌕Full Moon,	18	0	40 evening
☽First Quarter,	11	11	23 morning	☾Last Quarter	26	0	27 evening

SIX THINGS TO DO ON THE FARM IN JUNE.

1. Keep up rapid, shallow, level cultivation of the crops. If a dry spell comes, all the moisture in the soil will be needed.
2. Cut the wheat and oats as soon as they have colored up well. Don't let them get "dead ripe." Make a special effort to get them under shelter or in the stack without injury from rain
3. Cut grass and red clover when in full bloom. Much hay is allowed to get too ripe.
4. Keep on planting feed crops—corn for silage, cowpeas, peanuts, soy beans, sweet potatoes, etc.
5. Look after the farm machinery. Build a tool shed, if you have none, and keep every implement not in use under it. Sunshine and rain damage many implements more than the wear they get.
6. Keep an eye on the health of your hogs. If any get sick, or if cholera breaks out near you, get in touch with your State Department of Agriculture and prepare to inoculate against cholera.

FENCE OR AMBULANCE?

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke, and full many a peasant;
So the people said something would have to be done,
But their projects did not at all tally.
Some said: "Put a fence around the edge of the cliff";
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart became brimful of pity
For those who slipped over that dangerous cliff;
And the dwellers in highway and alley
Gave pounds or gave pence, not to put up a fence,
But an ambulance down in the valley.

"For the cliff is all right if you're careful," they said,
"And if folks even slip and are dropping,
It isn't the slipping that hurts them so much
As the shock down below when they're stopping."
So day after day as those mishaps occurred,
Quick forth would these rescuers sally,
To pick up the victims who fell off the cliff
With the ambulance down in the valley.

Then an old sage remarked, "It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd much better aim at prevention.
Let us stop at its source all this mischief," cried he;
"Come, neighbors and friends, let us rally;
If the cliff we will fence, we might almost dispense
With the ambulance down in the valley."

"Oh, he's a fanatic," the others rejoined;
"Dispense with the ambulance? Never!
He'd dispense with all charities, too, if he could.
No, no! We'll support them forever!
Aren't we picking folks up just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence
While their ambulance works in the valley?"

But a sensible few, who are practical too,
Will not bear with such nonsense much longer.
They believe that prevention is better than cure;
And their party will soon be the stronger.
Encourage them, then, with your purse, voice, and pen,
And (while other philanthropists dally)
They will scorn all pretense and put a stout fence
On the cliff that hangs over the valley.

Better guide well the young than reclaim them when old,
For the voice of true wisdom is calling;
To rescue the fallen is good, but 'tis best
To prevent other people from falling;
Better close up the source of temptation and crime
Than deliver from dungeon or galley;
Better put a strong fence 'round the top of the cliff,
Than an ambulance down in the valley.

—*Joseph Malins.*

JULY, 1913.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	Tu	First medical society organized in United States, 1766.	4 45	7 20	1 53
2	We	A rain barrel full of water—a house full of mosquitoes.	4 46	7 20	2 40
3	Th	Pettigrew's charge at Gettysburg, 1863.	4 47	7 20	3 38
4	Fri	Independence Day.	4 47	7 20	sets
5	Sat	First landing of the English at Roanoke Island, 1584.	4 48	7 19	9 8
6	Su	Pasteur administered first anti-rabies treatment, 1885.	4 48	7 19	9 44
7	Mo	Dr. Malan born, 1787. No filth, no flies.	4 49	7 19	10 12
8	Tu	S. D. Gross born, 1825.	4 50	7 19	10 36
9	We	A physic is a poor substitute for exercise and temperance.	4 50	7 18	11 7
10	Th	Columbus born, 1447. Alex. Monro died, 1767.	4 51	7 18	11 30
11	Fri	Col. Edward Moseley died, 1749.	4 52	7 18	11 57
12	Sat	William Osler born, 1849.	4 52	7 18	morn
13	Su	If common hair brushes, why not common tooth brushes?	4 53	7 17	0 27
14	Mo	William Bates died, 1699. Starve the fly.	4 53	7 17	1 6
15	Tu	Galileo born, 1654.	4 54	7 16	1 52
16	We	District of Columbia established, 1790.	4 55	7 16	2 44
17	Th	Gen. Pettigrew killed, 1863.	4 55	7 15	rises
18	Fri	Sir Robert Christison died, 1797.	4 56	7 15	8 9
19	Sat	Patriots of the Cape Fear capture and burn Fort Johnston, 1775.	4 57	7 14	8 38
20	Su	The first wealth is health.	4 57	7 13	9 3
21	Mo	Convention in session at Hillsboro rejected the Federal Constitution, 1788.	4 58	7 13	9 22
22	Tu	Everybody's doing it now! What? Swatting flies.	4 59	7 12	9 40
23	We	City of Raleigh founded on Roanoke Island, 1587.	5 0	7 12	10 4
24	Th	Flies are the most dangerous bugs on earth.	5 0	7 11	10 23
25	Fri	St. James. No spit, no consumption; no filth, no flies.	5 1	7 11	10 45
26	Sat	Flies as table bugs are as disgraceful as bedbugs.	5 2	7 10	11 12
27	Su	Dr. Carroll submits to yellow fever experiment, 1900.	5 3	7 9	11 45
28	Mo	Flies in the diningroom precede nurses in the sickroom.	5 3	7 8	morn
29	Tu	See that the baby gets fresh and pure milk.	5 4	7 7	0 28
30	We	William Penn died, 1718.	5 5	7 7	1 20
31	Th	Don't buy food where flies are tolerated.	5 6	7 6	2 22

MOON'S PHASES.

	D	H	M			D	H	M	
New Moon,	3	11	52	evening	🌕 Full Moon,	18	0	52	morning
First Quarter	10	4	23	evening	☾ Last Quarter,	26	4	45	morning

SIX THINGS TO DO ON THE FARM IN JULY.

1. Remember when you lay by the crops to cultivate shallow and leave the land level—don't cut the roots or make ditches.
2. Plant peas in the corn as you finish it, and plant all lands not otherwise employed to some manure or feed crop.
3. Build a silo—that is, if you have made any provision to fill it. Clean up and patch up about the barn.
4. Get all hay crops under shelter or in good stacks. Take care of the straw after threshing. Begin making arrangements to care for the corn without the useless labor of fodder pulling.
5. Keep on planting in the garden—and don't forget a patch of late roasting-ears and a patch of popcorn.
6. Have a consultation with the lady of the house and see that the screens are all right, that she has a fireless cooker and that she can get water without carrying it.

Autobiography of a Fly.

The first thing I remember is before I had any legs or wings and was wiggling and squirming in a nice warm bed of horse manure, where I spent my time eating and drinking the food about me. After a while I began to feel uncomfortable and found that I had grown too big for my skin. Relief came soon and my skin came off, and I ate some more manure and enjoyed it. In a few days more my skin again got too tight, and off it came, and then I went to sleep for I don't know how long. When I awoke I was kicking and struggling out of a very dry, hard skin, and after freeing myself I found I was in the open air and had legs and wings and looked and felt very differently than when I went to sleep. I was thirsty, so tried my wings for the first time and flew to a puddle by the manure pile and took a long drink, after which I felt much better.

Up to this time I had eaten nothing but manure, but I soon found out that there were other things just as good. I saw a lot of other flies, big and little, around a small building not far from the manure pile, so I flew over and had a feast. It is fun to wade around in your food and find so much that you hardly knew where to begin. I'm afraid I'm a glutton.

I spent quite a while here and then flew out in the sunshine where the white clothes were hanging on a line and walked over the napkins for a while. Wet things are very pleasant for a time, but my feet got covered with little pieces of food and things that wiggle around and tickle me so I like to wipe them off on a nice white napkin or tablecloth, and then I get around better. While I was enjoying the sun I smelled the most delightful smell that had ever come to me. It came from an open window, so in I flew. Things were smoking on a stove and a woman was mixing up some white stuff on a table. There were a lot of other flies about, and one that was too busy eating to see his danger got rolled up in the dough and I never saw him again, so I was careful and flew in and out and got a mouthful each time. I got rid of some more manure there, too, for the dough was sticky and pulled it off my feet.

Near by was a bowl of milk which smelled good, so I flew over and took a drink. Here I nearly lost my life, and if I had not been young and active, I am sure I would never have escaped. Several of us were drinking when the woman suddenly put out her hand in our direction, and we all made a jump. Two got hit and fell right in the middle. She hit me, too, but I landed near the edge and struggled out and flew away, but she caught the other two and pinched them and threw them on the floor, and went on mixing her dough apparently without a thought that she had killed two of my companions.

I stayed in the kitchen a long time and then went into another room where there was not so much to eat, as I was not very hungry. Here I found a lot of flies and a table set. One poor fly had drowned in the ice water; it must have been awfully cold, and two or three had their feet so tangled up in the butter that they couldn't get away, and the number of little germs that they had wiped off was enormous. They were swarming on the butter, but I had eaten enough that day, and before long it got dark and I was tired, so went to sleep on the edge of a glass.

8th Month. AUGUST, 1913. 31 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun Rises	Sun Sets	Moon Rises or Sets
1	Fri	Council of Safety at Halifax officially proclaimed the Declaration of Independence, 1776.	5 6	7 5	3 33
2	Sat	This is hookworm weather—beware of ground itch.	5 7	7 4	sets
3	Su	Richard Caswell, first governor after independence, born, 1729.	5 8	7 3	8 13
4	Mo	It is better to be healthy than pretty.	5 9	7 2	8 40
5	Tu	Flies on the table are worse than bugs in the bed.	5 10	7 1	9 11
6	We	William H. Wollaston died, 1776.	5 11	7 1	9 33
7	Th	John Berzchus, chemist, died, 1848.	5 11	7 0	9 59
8	Fri	B. Silliman born, 1779.	5 12	6 58	10 29
9	Sat	Stale milk is poison to the baby.	5 13	6 56	11 4
10	Su	Save your teeth and you save your digestion.	5 13	6 55	11 48
11	Mo	Richard Mead born, 1673.	5 14	6 54	morn
12	Tu	Cholera at Turin. 1834. Starve the fly.	5 15	6 53	0 40
13	We	Indian chief, Manteo, baptized at Roanoke Island, 1587. First baptismal service by English-speaking people in the New World.	5 16	6 52	1 37
14	Th	Manila surrendered, 1898.	5 17	6 51	2 38
15	Fri	Black Death reached Bristol, 1348.	5 18	6 50	3 41
16	Sat	No mosquitos, no malaria. Starve the mosquito.	5 19	6 49	rises
17	Su	A fly in the kitchen is more dangerous than a rattlesnake.	5 19	6 48	7 28
18	Mo	Virginia Dare born on Roanoke Island, 1587. First child born of English speaking parents in America.	5 20	6 46	7 46
19	Tu	This is the age of baths, not of perfumes.	5 21	6 45	8 10
20	We	J. T. Queckett, microscopist, died, 1861.	5 21	6 44	8 29
21	Th	John Tyndall born, 1820.	5 22	6 43	8 48
22	Fri	Thomas Fanning Wood, first Secretary of the State Board of Health, died, 1892.	5 23	6 42	9 13
23	Sat	Sir Astley Cooper born, 1768.	5 24	6 40	9 42
24	Su	St. Bartholomew.	5 25	6 39	10 19
25	Mo	First Provincial Congress of North Carolina met at New Bern, 1774.	5 26	6 38	11 6
26	Tu	Chew your food—your stomach has no teeth.	5 26	6 36	morn
27	We	Battle of Long Island, 1776.	5 27	6 35	0 4
28	Th	David L. Swain died, 1868.	5 28	6 33	1 8
29	Fri	John Locke born, 1632.	5 28	6 32	2 21
30	Sat	After visiting a typhoid case the fly may visit you next.	5 29	6 31	3 38
31	Su	Put nothing into the mouth except food and drink.	5 30	6 30	4 55

MOON'S PHASES.

	D	H	M			D	H	M	
● New Moon,	2	7	44	morning	○ Full Moon	16	3	13	evening
☽ First Quarter	8	10	49	evening	☾ Last Quarter,	22	7	4	evening
					● New Moon,	31	3	24	evening

SIX THINGS TO DO ON THE FARM IN AUGUST.

1. Keep up the cultivation of late crops and of the garden; chances are that all the moisture in the soil will be needed.
2. Make hay—cut the peavines as fast as the pods begin to turn and take care of everything that will make good feed.
3. Refrain from pulling fodder, and arrange to save the corn crop in a more economical manner.
4. Begin preparations for the fall seeding; work all land to go into wheat or oats into fine tilth just as soon as present crops come off.
5. In the cooler parts of our territory sow crimson clover; in all sections get seed of clover, rye, the vetches, etc.; and be ready to sow them for winter cover.
6. Clean up inside and out—keep the flies out; drain the mosquito-breeding places; whitewash and disinfect the poultry houses and pig pens.

scraping off as much dough as I could. The edge of a glass is a very nice thing to wipe your feet on.

In the morning the man and woman and a child came in to eat, and the woman poured out a glassful of milk for the child—the glass I had slept on. I guess people like germs and manure and things just as I do, for the baby drank all the milk. Day after day went by; we spent part of our time in the house and then would fly to the manure pile and the little building back of it, and we lived on the fat of the land. Two or three times a day we would get a whiff of that lovely smell from the kitchen and then we would have a race to see which would get there first. The woman would slap at us and the child chased us, but only a few got caught, and we enjoyed the fun. Sometimes one got killed, but we hadn't time to be sorry long, we were so busy eating and wiping our feet and investigating things.

After some weeks of this life, I flew away up in the air one morning and went into a window I had not seen before and found the child asleep on the bed. I went over and walked across his lips, and it was warm and nice, and I wiped my feet and stretched my wings, and almost went to sleep myself; but the child rolled over, so I flew over to the glass of water on a table and drank some. Pretty soon the woman came in and a man I had never seen before. They went over and looked at the child and felt him, and the man asked a lot of questions, and the woman seemed very worried. She asked him what the trouble was, and he looked at the child again and then out of the window toward the stable and around the room at us, and then he said something that sounded very funny to me—"typhoid fever; too many flies." What in the world did we have to do with it? However, I'm only a fly. The woman didn't seem to understand either, but after awhile she said something about screens and fly paper, and then I flew out to the stable. I saw some flies on fly paper once, and it's no place for me. She must have forgotten about screens, for I went in and out every day and walked over the child, and found lots to eat about him and the bed, and between this room and the kitchen and the stable we always had plenty to eat.

One morning when I went into the room I couldn't find the child. He was covered up with a sheet, so I went out again. The next day some people came to the house, and a lot of carriages, and I guess they took the child away, for I have never seen him since. The weather is getting cooler all the time, and I have trouble waking up in the mornings and feel stiff and lazy and don't want to eat much. I found a closet near the kitchen, and I think I will soon go in there and sleep until next spring, as it's too cold outside. I don't go much farther away from the kitchen now than the garbage can on the porch, and between that and the kitchen I find all I need to eat, and there is always something to wipe your feet on when they get too heavy with food—a piece of bread or cake, a plate or a fork or a spoon, and I'm sure nobody minds.—*Biennial Report of James H. Wallis, State Dairy, Food and Sanitary Inspector, Boise, Idaho.*

A D.D. gets so much per year—
An M.D. gets so much per—haps.—*Texas State Board of Health Bulletin.*

9th Month. SEPTEMBER, 1913. 30 Days

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun Rises	Sun Sets	Moon Rises or Sets
1	Mo	Labor Day. William Yarrell died, 1856.	5 31	6 28	sets
2	Tu	Prevention is better than cure, and far cheaper.	5 32	6 27	7 35
3	We	Joseph Lister, Sr., died, 1864.	5 33	6 25	8 0
4	Th	Have your cows tuberculin tested.	5 34	6 24	8 28
5	Fri	First Continental Congress, Philadelphia, 1774.	5 35	6 22	9 3
6	Sat	Constitutional Convention met at Raleigh, 1875.	5 35	6 21	9 46
7	Su	Dr. Richard H. Lewis made Secretary of the State Board of Health, 1892.	5 36	6 19	10 35
8	Mo	Gov. Hyde died of yellow fever, 1712.	5 36	6 18	11 29
9	Tu	California admitted, 1850.	5 37	6 16	morn
10	We	Morning eye opener—a pint of water, inside.	5 38	6 15	0 31
11	Th	Don't overwork your digestion if you would keep healthy.	5 38	6 14	1 33
12	Fri	Largest fatalities from plague, London, 1665.	5 39	6 12	2 36
13	Sat	Quebec taken from French, 1759.	5 40	6 11	3 39
14	Su	Alex. von Humboldt born, 1769.	5 41	6 10	4 40
15	Mo	William A. Graham born, 1804. Wm. Taft born, 1857.	5 42	6 8	rises
16	Tu	G. D. Fahrenheit died, 1736.	5 43	6 6	6 35
17	We	Ember Day. John Kidd died, 1851.	5 44	6 5	6 54
18	Th	Constitution of the United States adopted, 1787.	5 45	6 4	7 16
19	Fri	Ember Day. End worst week of plague, London, 1665.	5 45	6 2	7 43
20	Sat	Ember Day. Jerome Cardan, physician, died, 1576.	5 45	6 1	8 18
21	Su	A dirty home is a dangerous home.	5 46	6 0	9 0
22	Mo	Massacre of white settlers on the Neuse River by the Tuscarora Indians, 1711. Beginning of the Great Indian Wars of 1712–1715.	5 47	5 58	9 52
23	Tu	To cure consumption—begin early.	5 48	5 56	10 51
24	We	Delaware Indians given land in France, 1828.	5 49	5 54	11 58
25	Th	A. G. Werner born, 1750.	5 50	5 53	morn
26	Fri	Battle of Charlotte and defeat of Cornwallis, 1780.	5 50	5 52	1 10
27	Sat	Sunlight and fresh air kill the germs of consumption.	5 51	5 50	2 27
28	Su	Ship with stamps for use in North Carolina arrived in the Cape Fear River, 1765. Louis Pasteur died, 1895.	5 51	5 49	3 46
29	Mo	Michaelmas. No rats, no plague.	5 52	5 47	5 3
30	Tu	John Holland, optician, died, 1761.	5 53	5 46	sets

MOON'S PHASES.

	D	H	M			D	H	M	
☽ First Quarter	7	7	52	morning	☾ Last Quarter,	23	7	16	morning
○ Full Moon,	15	7	32	morning	● New Moon,	29	11	43	evening

SIX THINGS TO DO ON THE FARM IN SEPTEMBER.

1. Save feed—cut and shock the corn if you have no silo, shredding or cutting it up later if you can; harvest everything that will make good hay, and store and stack it so that it will keep.
2. Save seeds—select your cotton and corn for next year's planting if you do not expect to buy from some one who has better than you have; don't put it off till next spring and then plant poor seed.
3. Sow oats if land can be made ready; keep land intended for wheat well stirred; use a grain drill to put in oats if possible.
4. Sow rape, crimson clover, turnips, etc., for pasture and winter cover.
5. Get in the winter's wood and store it in the dry; fix a walk to the woodshed if there is none.
6. Figure a little and see if you cannot afford to put in a water supply system before cold weather comes; if you find you can do it at all, go ahead—it will pay.

Preface to "Essentials That You Should Know" About Important Diseases.

We are free to admit that there are many combinations of circumstances which may suggest to the reader that some of the statements made in regard to the cause and prevention of the important diseases, hereinafter discussed, are incorrect. Now, it is impossible, in a brief statement about any disease, such as those made regarding consumption, typhoid fever, malaria, etc., in this Almanac, to anticipate and answer all the objections that some of the thousands of our readers may raise, but, if those who think they know of cases of any of the diseases mentioned, that cannot be explained in accordance with the statements made regarding them, will write to the State Board of Health for their pamphlet on the disease in question, they will find their objections to our explanation of the cause and prevention of any of the diseases mentioned fully and satisfactorily answered, we believe.

About Consumption.

THE ESSENTIALS THAT YOU SHOULD KNOW

That one-tenth of all deaths occurring in the United States, or, in round numbers 150,000 deaths annually, are due to consumption. That ten per cent of our 93,000,000 people, or 9,300,000, will receive the seeds of this disease into their bodies and die from their effects; that eighty-five per cent of our 93.000,000 people, or 79,050,000, will receive the seeds of this disease into their bodies, become tuberculous or diseased to variable degrees, and recover; that ninety-five per cent of our 93,000,000 people, or 88,350,000, will receive, at some time during their lives, these tuberculous or consumptive germs into their bodies.

That in North Carolina *one-seventh* of all deaths, or 5,558 deaths annually, are due to consumption; that *one-seventh* of our 2,206,000 people, or 315,142, will die from tuberculosis or consumption; that 1,885,000 of our 2,206,000 people will receive the seeds of this disease into their bodies and to variable degrees become tuberculous; that 2,105,700 of our 2,206,000 people will sooner or later take consumptive germs into their bodies.

The great probability or almost certainty of your being infected with consumptive germs sooner or later depends upon two factors: *First,* the number of people scattering consumptive germs and the very effective means of scattering these germs that is adopted; *second,* the length of time the consumptive germ can live under natural conditions after it is thrown off from the body.

There are 1,250,000 people in the United States and 50,000 people in North Carolina furnishing consumptive germs to the rest of the population. These people discharge the germs by the millions in the discharges of the nose and mouth. With every cough and every sneeze these germs are thrown out, not only in the visible particles of discharge, but, what is by far more important, in the invisible droplets which float four or five hours in the air and often forty or fifty yards from where they were discharged. See the zone of danger, its extent and duration, which the careless consumptive throws about himself. This fog poison from infected lungs is by far the most important mode of infection. The germs in the

10th Month. OCTOBER, 1913. 31 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun		Moon
			Rises	Sets	Rises or Sets
1	We	Darwin finished proof Origin of Species, 1859.	5 54	5 44	6 26
2	Th	Plague in London, 1592.	5 55	5 43	6 57
3	Fri	First German emigrant in Pennsylvania, 1638.	5 56	5 41	7 39
4	Sat	Gen. Francis Nash, commander of North Carolina troops in Washington's army, mortally wounded at Battle of Germantown, 1777.	5 57	5 40	8 26
5	Su	Matt W. Ransom born, 1826. Edward Trudeau born, 1848.	5 58	5 39	9 21
6	Mo	Cornerstone of Salem Academy, oldest school for girls in the South, laid, 1803.	5 59	5 38	10 22
7	Tu	Battle of Kings Mountain, 1780.	6 0	5 36	11 25
8	We	It is better to sleep in a cold room than in a cold grave.	6 1	5 35	morn
9	Th	Columbus discovered America, 1492.	6 2	5 34	0 29
10	Fri	Henry Cavendish born, 1731.	6 3	5 32	1 31
11	Sat	If war is hell, what is consumption?	6 3	5 30	2 33
12	Su	Cornerstone of the first building at the University of North Carolina laid, 1793.	6 4	5 29	3 34
13	Mo	A light overcoat is better than a heavy cold.	6 5	5 28	4 33
14	Tu	Consumption is difficult to cure but easy to prevent.	6 6	5 27	5 30
15	We	Andreas Vesalius died, 1564.	6 7	5 25	rises
16	Th	Alberton Haller, born, 1708.	6 8	5 24	5 47
17	Fri	Burgoyne surrendered, 1777. Rockefeller Hospital opened, 1910.	6 9	5 23	6 20
18	Sat	St. Luke, Evangelist. Rene de Reamur died, 1757.	6 9	5 21	6 59
19	Su	Sir Thomas Brown born, 1605.	6 10	5 19	7 46
20	Mo	James Iredell died, 1799.	6 11	5 18	8 44
21	Tu	Rockefeller creates Hookworm Commission, 1909.	6 12	5 17	9 46
22	We	Phillipe Record died, 1889.	6 13	5 16	10 54
23	Th	Keep the screens up another month.	6 14	5 15	morn
24	Fri	Many a cough ends in a coffin.	6 15	5 14	0 6
25	Sat	Torricello died, 1647. Swat the stray fly.	6 16	5 12	1 21
26	Su	A little ventilation is better than much quinine.	6 16	5 11	2 37
27	Mo	Sir Henry Holland born, 1788.	6 17	5 10	3 47
28	Tu	Robert Liston born, 1746.	6 18	5 9	5 6
29	We	Theodore Roosevelt born, 1858.	6 19	5 8	6 26
30	Th	It's good for what ails you. What? Fresh air.	6 21	5 6	sets
31	Fri	Hallowe'en.	6 22	5 5	6 14

MOON'S PHASES.

	D	H	M			D	M	H	
☽ First Quarter,	6	8	32	evening	☾ Last Quarter,	22	5	39	evening
◯ Full Moon,	15	0	53	morning	● New Moon,	29	9	15	morning

SIX THINGS TO DO ON THE FARM IN OCTOBER.

1. Sow wheat and oats; get the oats in as soon as possible; treat seed of both crops with formalin or bluestone if smutty, and look out for cheat and other weed seeds.
2. Keep on sowing cover crops; still time to sow rye, vetch, crimson clover; also rape and winter turnips.
3. Put the turning plows to work, especially on clay soils; if you subsoil, this is the time for it.
4. Take special care of the land to prevent winter washing; fix up terraces, open out ditches, etc.; underdrain where it is needed.
5. Get the corn and corn stover under shelter early; look after all late crops that will make feed.
6. Store the cotton under shelter; and keep it picked off as closely as practicable.

larger pieces of discharge fall on the floor or other object, and must dry and be ground by trampling feet, trailing skirts and brooms into dust before the germs can do further harm. While drying, the germ, away from the human body, its natural home and source of nourishment, is starving, degenerating, dying; but, while the germ grows ever weaker from the time it leaves the body, it will live, under favorable external conditions, as long as eight months, and probably frequently produces infection after weeks or possibly months of drying.

Seeing the great probability of meeting at some turn in life this ubiquitous foe, the wise man will go armed for the conflict. He will keep his vital defenses in fighting trim. To do this he will live judiciously, temperately. He will get his share of fresh air, that costs nothing and forms our most essential food, by sleeping in a room with open windows with bed so placed as to avoid drafts; he will drink lots of water, remembering that the body is three-fourths water and that much water is needed to float the food to the cells and the wastes away; he will eat to live and not live to eat; gluttons are unhealthy; he will be temperate in all things, including work and play and rest. Eight or nine hours' good steady work each day is enough. Spend seven or eight hours at meals, reading, and playing; we stop play too young; with the play habit goes the zest of life and the resilience of youth. Then, at the close of each day, take a good eight hour dose of tired nature's sweet restorer, balmy sleep. Now, if you *have* to fight the germs of consumption you are prepared, but don't fight that foe so long as you can avoid him.

To avoid consumption germs avoid the careless spitters and sneezers—that is all persons who cough and sneeze without holding a paper or cloth handkerchief in front of their faces; too many of them are consumptives; take no chances. The careful consumptive deserves sympathy, respect and companionship; the careless consumptive is one of our most dangerous foes; avoid him.

No spit, no consumption.

Note: If the reader desires a fuller discussion of this disease or wishes the experimental facts on which some of the above statements are made, a postal card to the State Board of Health, at Raleigh, N. C., requesting their pamphlet on tuberculosis, will be effective.

About Typhoid Fever.

THE ESSENTIALS THAT YOU SHOULD KNOW

You should know how typhoid fever is contracted in order to avoid this fearful disease. There are five routes by which the disease finds its victim: (a) contact infection; (b) carrier infection; (c) milk infection; (d) fly infection; and, (e), water infection.

CONTACT INFECTION.

Some one, nursing a patient with a recognized or unrecognized attack of typhoid fever, or handling something that has been in contact with such patient, gets the hands visibly or invisibly soiled with some of the patient's discharges, and then handles or pollutes food or drink that is taken into her own or some one else's system.

CARRIER INFECTION.

A person who has had typhoid fever in a recognized or unrecognized form from one to forty years pre-

11th Month. NOVEMBER, 1913. 30 Days.

			Sun		Moon
D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Rises	Sets	Rises or Sets
1	Sat	All Saints' Day. Arthur Dobbs took oath of office as Governor at New Bern, 1754.	6 22	5 5	7 8
2	Su	All Souls' Day. Be a fresh air crank.	6 23	5 4	8 8
3	Mo	If you can't work outdoors, sleep outdoors.	6 24	5 3	9 12
4	Tu	Don't permit your palate to get your stomach into trouble.	6 25	5 2	10 17
5	We	Consumption causes more deaths than any other disease.	6 26	5 1	11 21
6	Th	Koch announced lymph treatment consumption, 1890.	6 27	5 0	morn
7	Fri	Tuberculosis, pneumonia and bronchitis are house diseases.	6 28	4 59	0 22
8	Sat	Most of us sleep too little and eat too much.	6 28	4 58	1 25
9	Su	Ventilating rooms is easier than digging graves.	6 29	4 57	2 24
10	Mo	Richard Caswell died, 1789.	6 30	4 56	3 20
11	Tu	Benj. Shattuck, American physician, born, 1742.	6 32	4 55	4 20
12	We	Convention to form a State Constitution met at Halifax, 1776.	6 33	4 55	5 23
13	Th	The best guide to dress is the weather.	6 34	4 54	6 25
14	Fri	Charles Lyell born, 1797.	6 35	4 53	rises
15	Sat	Plague in London, 1479.	6 36	4 53	5 43
16	Su	Wilmington patriots forced Wm. Houston, Stamp Agent, to resign, and take an oath not to execute the Stamp Act in North Carolina, 1765.	6 37	4 52	6 39
17	Mo	Suez Canal opened, 1869.	6 38	4 51	7 40
18	Tu	Edward Forbes died, 1854.	6 39	4 51	8 46
19	We	James Garfield born, 1835.	6 40	4 50	9 56
20	Th	Convention at Fayetteville adopted the Federal Constitution, 1790.	6 41	4 50	11 7
21	Fri	Fresh air is cheaper than drugs and better than doctors.	6 42	4 49	morn
22	Sat	Walter Reed died, 1902. Keep your germs to yourself.	6 43	4 49	0 19
23	Su	A stuffy room is the germ's best ally.	6 44	4 49	1 34
24	Mo	Origin of Species published, 1859.	6 45	4 48	2 42
25	Tu	Alcohol is a good preservative, but not for your health.	6 46	4 47	3 59
26	We	Joseph Black died, 1799.	6 47	4 47	5 18
27	Th	Thanksgiving Day.	6 48	4 47	6 35
28	Fri	A physic is a poor substitute for exercise and temperance.	6 49	4 46	sets
29	Sat	Andrew Jackson, seventeenth president of the United States, born at Raleigh, 1808.	6 50	4 46	5 50
30	Su	Advent Sunday. St. Andrew.	6 51	4 46	6 53

MOON'S PHASES.

	D	H	M		D	H	M
☽ First Quarter,	5	1	20 evening	☾ Last Quarter,	21	2	43 morning
○ Full Moon,	13	5	57 evening	● New Moon,	27	8	27 evening

SIX THINGS TO DO ON THE FARM IN NOVEMBER.

1. Get ready for winter; see that everything is snug about the house, the barns and poultry houses.
2. Get the crops in; put the cotton out of the weather; see that the roughage is under shelter or well stacked; store the apples, potatoes and late vegetables carefully.
3. Keep the plows going, breaking deep and thoroughly, and keep on sowing rye.
4. Set out fruit trees, shade trees, grape vines, berries, etc.; make a lawn if you have not a good one already.
5. If you are not following a rotation of crops, get to work and lay out one suited to your farm and circumstances, and get down to business farming.
6. Arrange for a supply of reading matter for yourself, your wife and the children—see that good lights are provided.

viously may still carry the germs of the disease in the bowels and sometimes in the bladder. It has been shown that about three people out of every hundred who have typhoid fever continue to carry the germs of the disease. The carriers that are sooner or later recognized as such are those whose occupations bring them in close contact with food supplies, cooks, waiters, and stewards. When a cook gives a history of the occurrence of several cases of typhoid fever in a number of families for whom she has worked, a bacteriological examination of her bowel discharges will nearly always show the presence of the typhoid germs.

MILK ROUTE.

Milk that has been directly or indirectly handled by a carrier or by one in contact with a case of typhoid fever, that is, one nursing a case of the disease, will frequently produce the disease in those who drink it.

FLY ROUTE.

Flies carry the excrement that has not been promptly and thoroughly disinfected from some case of fever in the neighborhood, or from some open privy that has been used by a carrier, to some one's food and so introduce the germ into another system.

WATER ROUTE.

Wells are polluted with typhoid germs from near-by privies. This usually happens when the surface water during rains washes the contents of the privy toward the well, which is not walled with cement about the surface and properly raised from the surface of the ground as it should be. Occasionally, when the privy is situated on lower ground but close to the well, the soil becomes so thoroughly saturated in time with fecal material that it reaches the well water.

HOW TO AVOID TYPHOID FEVER.

Don't eat or drink anything that is handled by some one nursing the disease unless you are sure such person thoroughly disinfected his hands as directed by the doctor before handling your food and drink. If the doctor diagnoses a case of typhoid fever and does not leave careful directions for disinfecting the hands of the nurse, and disinfecting the discharges from the patient, he has omitted one of his most important duties and that very fact raises a question as to his trustworthiness.

When you can not discover any other origin for fever in your home, get the history of your cook with reference to typhoid fever among the families of past employers.

You cannot protect yourself against typhoid fever carried from some dairy in milk. That's your town's or city's business. Your municipal authorities can protect you from this source of typhoid fever if they will, and if they don't the chances are nine out of ten that they can be sued and heavy damages recovered.

By your example and civic influence get rid of the old open insanitary privy; it produces most of the poison which the fly carries. Have the sanitary privy devised by the State Board of Health replace it. Write for booklet. Screen your house, particularly the dining room and kitchen, use fly-traps and fly-paper freely and continuously so long as flies exist.

See that the privy and well are at least 150 feet apart and that the natural surface drainage is not from the privy toward the well. See that the well has a good tight wall,

12th Month. DECEMBER, 1913. 31 Days.

D. of Mo.	D. of Wk.	Important Days, Dates and Healthgrams.	Sun Rises	Sun Sets	Moon Rises or Sets
1	Mo	Swat consumption—buy Christmas seals.	6 51	4 46	7 59
2	Tu	Monroe Doctrine, 1823.	6 52	4 46	9 5
3	We	Publication of the first book ever printed in North Carolina, "The Yellow Jacket", a revisal of the laws, 1751.	6 53	4 46	10 10
4	Th	It is better to have faded carpets than faded cheeks.	6 54	4 46	11 13
5	Fri	Cool weather does'nt call for closed windows.	6 55	4 46	morn
6	Sat	A hot foot bath is better for a cold than a gallon jug.	6 56	4 46	0 14
7	Su	Drink plenty of water every day.	6 56	4 46	1 11
8	Mo	Herbert Spencer died, 1903.	6 57	4 46	2 8
9	Tu	J. R. Forster died, 1798. Buy Red Cross Seals.	6 58	4 46	3 11
10	We	To keep your job—keep healthy.	6 59	4 46	4 13
11	Th	Constitution of North Carolina drafted by Convention at Halifax, 1776.	7 0	4 46	5 17
12	Fri	The tighter the house, the tighter your colds.	7 1	4 46	6 19
13	Sat	Indiana admitted, 1816.	7 2	4 46	rises
14	Su	Convention to form a constitution for the State of Franklin met at Jonesboro, 1784.	7 2	4 47	5 30
15	Mo	Heavy soled shoes are better than rubbers.	7 3	4 47	6 37
16	Tu	De Fourcroy died, 1809.	7 4	4 47	7 46
17	We	Ember Day. Convention at Halifax adopted the Declaration of Rights, 1776.	7 4	4 47	8 59
18	Th	Convention at Halifax adopted the first constitution of the State of North Carolina, 1776.	7 5	4 48	10 10
19	Fri	Ember Day. Whiskey never cured consumption.	7 6	4 48	11 25
20	Sat	Ember Day.	7 7	4 48	morn
21	Su	Landing of the Pilgrims at Plymouth Rock, 1620.	7 7	4 48	0 33
22	Mo	First day of winter.	7 8	4 49	1 45
23	Tu	J. S. Dorsey, anatomist, born, 1783.	7 8	4 50	3 0
24	We	Johns Hopkins died, 1873.	7 8	4 50	4 15
25	Th	Christmas Day.	7 9	4 51	5 29
26	Fri	St. Stephen.	7 9	4 52	6 38
27	Sat	St. John Evangelist. Louis Pasteur born, 1822.	7 10	4 52	sets
28	Su	De Tournefort died, 1708. Woodrow Wilson born, 1856.	7 10	4 53	5 42
29	Mo	Thomas Sydenham died, 1687.	7 10	4 54	6 48
30	Tu	General Assembly met at Raleigh for the first time, 1794.	7 10	4 54	7 53
31	We	G. A. Borelli died, 1679.	7 11	4 55	8 58

MOON'S PHASES.

	D	H	M		D	H	M
☽ First Quarter,	5	9	45 morning	☾ Last Quarter,	20	11	2 morning
○ Full Moon,	13	9	46 morning	● New Moon,	27	9	15 evening

SIX THINGS TO DO ON THE FARM IN DECEMBER.

1. Find out what your year's work has profited you; take an inventory and find out what you are worth, and if your farming has paid.
2. Get ready for next year's work; lay out the crops; find out what you need in the way of tools, stock, fertilizers, etc.; and arrange to farm on a business basis.
3. Take at least one day off and visit your school and encourage the teacher and pupils a little; help the children with their studies and keep them enthused.
4. Make that split-log drag and put it to work now while you have time; fix up the farm roads and the walks about the house.
5. Look after fences; clean up stumps; dig ditches; fill gullies; drain wet lands.
6. Make the winter evenings pleasant; provide plenty of fuel, good lights, good books and papers and some games and music.

preferably concrete, extending at least eighteen inches above the surface of the ground and six or eight feet below the surface.

Do away with the bucket and chain and put in a pump.

SOMETHING ABOUT TYPHOID FEVER THAT ALWAYS CALLS FOR EXPLANATION.

To-wit, two or more cases occurring in the same family or household with two to four weeks elapsing between the onset of the cases. Such an occurrence always raises one of two questions: was the original source of the disease properly sought out by the attending physician and blocked, or has he (the physician) allowed the original cause of the disease to claim a second unnecessary victim? Was the secondary case due to contact infection through careless nursing, and, if so, was the nurse to blame for not obeying instructions as to disinfection of hands, or were the instructions insufficient or not explicit?

About Malaria.

THE ESSENTIALS THAT YOU SHOULD KNOW.

There are just two factors responsible for malaria: (1), A particular variety of mosquito, and (2) a person with the malarial germs or seeds in their body. The person with the malarial seed or germ may be apparently well—a malaria carrier.

Neither of these factors alone can produce a case of malaria. One might live indefinitely with hundreds of malarial mosquitoes about him and never have malaria; or, one might live indefinitely in a malaria hospital where the wards were crowded with the victims of the disease and never contract it. Every case of malaria is the result of a malarial mosquito biting a person who has the malarial germs in his body and then biting a second person who is well, inoculating him with the germs carried from the first person bitten.

The prevention of malaria depends upon the elimination of one of the two factors concerned in the causation of the disease.

To get rid of the mosquito factor it is necessary to remove or drain all pools, bottles, buckets, cups, cans, or gutters of stagnant water that are not separated from the residence by at least two hundred yards of space in which there is no woods, undergrowth, cotton, corn, wheat, tobacco, or other vegetation that would break a current of wind. The malarial mosquito has very weak wings and cannot fly a distance of two hundred yards without protection against currents of wind by some kind of vegetation. If stagnant water cannot be removed it should be oiled every week with one ounce of kerosene oil to every ten square feet of surface. If there is much vegetation in the water, oiling will be of little value. Where standing water is necessary and the use made of it is such that it would be interfered with by the use of oil, the water may be stocked with fish, and the edges, if it is a pool, made perpendicular for a depth of two or three inches, so that the fish can get out to the extreme edge of the water where the mosquito eggs are usually laid.

To get rid of the other factor, the person with the malarial seeds in his body, the malaria reservoir or carrier, it is necessary that every person who suffers from chills and fever, ague, or malaria should have impressed upon him, not only for his own health's sake, but for the safety of his neighbors, the importance of a thorough five or six weeks' course of quinine. Three or four days' treatment with quinine will stop the symptoms of malaria, and many people who take this treatment stop the quinine as soon as the symptoms have disappeared. Such people, as a rule, will continue to carry the seed of the disease in their blood for six, eight or twelve months after, during which time, at intervals of three to four weeks, except in the winter, they may be subject to attacks of chills and fever for which they use the same incomplete treatment adopted in the primary attack of the disease. Such people usually remain in run down health for months and years and furnish mosquitoes the poison with which to produce other cases of chills and fever in the household and neighborhood in which they live.

One of the most important facts that the people can have impressed upon them in regard to malaria is that its treatment should be *thorough,* that is, last at least five or six weeks. Now, there are many ways of giving quinine, but in lieu of something better the following plan will prove effective: Twenty grains (20 grs.) for first *four* days after chill; fifteen grains (15 grs.) a day for the next week, that is, through the eleventh day; ten grains (10 grs.) for the next two weeks, that is, through the twenty-fifth day; and five grains (5 grs.) through the next week, that is, through the thirty-second day. The disagreeable symptoms resulting from the use of the drug will not be present after the fourth day, except in very rare cases. The usual dose is five grains in a capsule, but it does not matter very much about the size of the doses, so that all combined make the daily amount above suggested.

About Contagious Diseases.

THE ESSENTIALS THAT YOU SHOULD KNOW.

First, the relative dangers of the contagious diseases. The reports of the United States census show that the most dangerous contagion is diphtheria; the next most dangerous, whooping cough; the next most dangerous, measles; and then scarlet fever. See accompanying table:

AVERAGE ANNUAL MORTALITY[1], MORBIDITY[2], AND FATALITY[3], OF QUARANTINABLE DISEASES ACCORDING TO UNITED STATES CENSUS FOR THE FIVE YEARS 1904-1908.

DISEASE	MORTALITY PER 100,000	NUMBER OF DEATHS	ATALITY	NO. CASES (MORBIDITY)
Diphtheria	25.0	9,690	8%	121,125
Whooping Cough	11.0	4,382	10%	43,820
Measles	10.3	3,998	5%	79,960
Scarlet Fever	9.7	3,786	12½%	30,288

For Measles, Diphtheria and Scarlet Fever, "Diseases of Infancy and Childhood," by Holt; for Whooping Cough, "Prophylaxis and Treatment of Internal Diseases," Forchheimer.

[1] The number of people per hundred thousand of the population *dying* from disease.

[2] The number of people per hundred thousand of the population *sick* of a disease.

[3] The number of people per hundred of those having any given disease that die from that disease.

In North Carolina for the year 1911 whooping cough killed 736 children; diphtheria, 257; measles, 141; scarlet fever, 49. These figures show that whooping cough killed fifteen times as many children as scarlet fever, more than five times as many children as measles, caused almost twice as many children to die as diphtheria, measles, and scarlet fever combined.

Second, the dangerous contagious should be quarantined—

(a) Because every case of contagious disease comes from a preexisting case;

(b) Because there are 675,000 contagious diseases so contracted every year in the United States;

(c) Because there are 16,000 contagious diseases so contracted every year in North Carolina;

(d) Because there are 1,200 deaths from contagious diseases every year in North Carolina;

(e) Because, according to a high court of science, at least half of these cases and deaths would have been prevented by an efficient quarantine;

(f) Because the infringements of quarantine cost at least five times as many lives as infringements of the law against murder, as shown by census statistics;

(g) Because rigid quarantine enforcement is, therefore, five times as important as the rigid enforcement of the law against murder;

(h) Because *you* believe in quarantine for your next door neighbor's child when it is afflicted with whooping cough, measles, scarlet fever, or diphtheria and your child has never had the disease which its companion has, and your opposition to quarantine arises only when conditions are reversed, in short, you should believe in quarantine because you believe in the Golden Rule.

Third, that only a *rigid* quarantine should be established. If a quarantine law is only half-heartedly enforced, as it is in most places, there will be many cases of contagion on the streets, in schools, churches, and other public places. Under such circumstances parents who have more confidence in their local government than they should have will allow their children to go around and to come in contact with contagion that they have been led to believe is in quarantine. If, on the other hand, the local government frankly announces that no quarantine for any disease will be established, parents, instead of having a blind, misplaced confidence in an untrustworthy health administration, would keep their children at home and so protect them. It is, therefore, perfectly clear that quarantine should either be rigidly enforced or not attempted.

The Scent Was Strong.

A man of sporting type was traveling by rail when he had as fellow travelers for some distance a couple of Scotch farmers who had been South on business. The sporting man presently began talking about dogs, a subject that did not interest the agriculturists very deeply.

"I have a dog with a wonderfully keen scent," he said, "and just permit me to tell you that one day after I left home he broke his chain, and although I had been away for hours he tracked me and found me merely by scent. What do you think of that?"

"I think," replied the heavier of the twain, with a yawn, "ye ocht tae tak' a bath!"—*Exchange.*

And Then Some.

In order to impress upon his congregation the length of eternity, a colored preacher used the following illustration:

"If a sparrow, breddern, should take a drop of water from the Atlantic Ocean at Coney Island, and with this drop of water in its beak should hop a hop a day until it reached the Pacific Ocean at San Francisco, and when it got there should let the drop fall into the Pacific, and when this was done should turn around and hop a hop a day all the way back to Coney Island and get another drop and do the same thing over, and keep on doing this very same thing until it had carried the whole Atlantic Ocean over into the Pacific, it would then only be early morning in eternity."—*Current Literature.*

A certain man was telling how he had dodged the health officer and escaped vaccination, whereupon the old doctor told him he was like the Irishman that "beat" the railroad. Pat was telling with great gusto how he had beat the railroad, and when asked how he did it replied: "Bejabbers, I bought a return ticket and ain't going back."—*Florida State Board of Health Bulletin.*

Drink to me only with thine eyes,
And I will pledge with mine;
For by this means may we escape
The curse of germs malign!
The crystal water from the well
With evil bugs may swam;
And milk that honest dealers sell
Do us all kinds of harm!
—*Texas State Board of Health Bulletin.*

What the Head of the Family Can Do for the Commoner Ills of Life

HUBERT B. HAYWOOD, JR., RALEIGH, N. C.

Introductory.—Shakespeare says that "Brevity is the soul of wit." I shall endeavor to treat each heading and paragraph in this paper in as brief a manner as possible. However, there are many pitfalls into which one may stumble in so doing. As broad a subject as I am endeavoring to cover in so brief a manner must necessarily have a diversity of opinion in regard to it. So I present these views for what they are worth.

This is, as we know, an age of preventive medicine. That is, we should ward off disease before it gets to us. We should all join hands in this—laity and profession alike. We can all help by the proper observance of the laws of health—that is, proper eating, sleeping, working, and well regulated exercise. A large part of the burden lies with the laity in the proper observance of quarantine for all contagious and infectious diseases. There are many of the ills of life which the head of the family can deal with if he or she exercises a little judgment and intelligence.

TOOTHACHE.

Among the commoner ills is toothache. How shall you deal with that? If there is a cavity cleanse it as thoroughly as possible and then pack it with cotton soaked in oil of cloves. As soon as feasible go to a reliable dentist and get him to treat the tooth, and see if it can be saved. The point is not to sacrifice the tooth needlessly. Even the early removal of a child's temporary teeth affects the shape of the jaw. Hot applications, either in the shape of the hot water bags or bags of hot salt or warm cloths, are efficacious in relieving the pain temporarily.

EARACHE.

Earache is a common complaint in a growing family. It may mean diseased teeth, diseased tonsils and adenoids, or a congestion of the mucus membrane of the middle ear, or of the drum itself. The cause should be investigated and removed if the child is subject to recurrent attacks. For the relief of the pain, which is often very acute, douching the ear with hot salt solution, the application of heat to the ear externally, or, to take the edge off of the pain, a small dose of paregoric, say ten drops, repeated in an hour's time if necessary. Some special drops containing cocaine may be furnished by the physician. Some times blowing the fumes of tobacco or chloroform into the ear will relieve the pain. A popular household remedy, of doubtful efficacy, is the residue of a teaspoonful of burned laudanum saturated into cotton and placed in the ear. The aurists say that a safe rule is to never put anything larger than the end of your thumb in the ear. If the pain persists over a day or more, and if there is a chronically discharging ear, the family doctor or a specialist should be consulted.

HEADACHE.

Headache, dependent as it may be on so many causes, should be investigated with the point of view of determining the cause if possible, and the correction of that. A school child or any one who uses his eyes a great deal and is subject to headache and neuralgic pains in the head should always be investigated for errors of refraction and, if they exist, the same corrected by properly fitting glasses.

CONSTIPATION.

Constipation is a prolific source of headaches and should be corrected by proper attention to the diet and well regulated exercise. Foods leaving a large residue in the intestines, as beans, peas, corn, whole wheat bread, fruits, raw and stewed, combined with plenty of water and regularity of habit, often act most happily. Certainly, if the headache is acute. one should resort to a laxative immediately. Try some simple remedy as 10 to 20 grains of sodium bromide or some aromatic spirits of ammonia, 15 drops to one teaspoonful. The laity have learned that aspirin in doses of from five grains to ten grains will relieve ordinary neuralgic headaches. Still, if the headaches are persistent and recurrent, send for the doctor and put on him the responsibility of finding out the cause, be it errors of refraction, dietary indications, constipation or pressure along the course of the fifth nerve, malaria or what not.

SORE THROAT.

Sore throat is particularly worthy of investigation by the physican if the patient is a child. Under any circumstances, whether it be adult or child, if there are ulcers or membrane in the throat, the ever present thought of diphtheria should be in the mind of the parent. The golden time for diphtheria antitoxin to do good is in the very earliest stages of the disease. So send for the doctor and if the throat does not present a complete disease picture, a swab from the throat and a microscopical examination can quickly determine the presence of the germ. For an ordinary painful sore throat gargling with warm soda water is a good family remedy. Peroxide of hydrogen diluted one-half is good. Some alkaline gargle, as Dobell's Solution, may be kept on hand, or the liquor antisepticus alkalinus of the national formulary may be kept in the family medicine chest. A brisk saline purge and the external application of heat usually help.

COLDS.

Coryzas, or bad colds, may be benefited at the onset by prompt treatment. Many remedies are prescribed. Nearly every person has a favorite. Certainly in the early stages a thorough cleansing of the mucus membrane of the nose and throat with an alkaline spray of the type of Dobell's Solution, the administration of a saline purgative, a hot tub bath, followed by a hot drink, say of lemonade, and the administration of Dover's powders, in ten grain doses, or quinine in five grain doses, and a warm bed for the night will turn the tide ofttimes and save the misery of a bad cold that may run over weeks. For the treatment of bad colds the remedies are legion. Usually some stimulating expectorant is needed. Perhaps the most useful one is ammonium chloride prescribed in 5 to 10 grain doses, usually given in some syrup vehicle as Syrup of Tolu in teaspoonful doses. Most often a sedative for the cough is necessary for the prescription. One of the newer opium derivatives is usually prescribed, usually Heroin or Codein in doses best prescribed by the doctor and not entrusted to the patient. The chronic cough, accompanied by loss of weight, fever, and night sweats should be suspected of being tubercular until proven innocent.

INDIGESTION.

Indigestion is a broad complaint and is the symptom of many ills. Very often it depends on a dietetic error, and proper attention to that will relieve the trouble. However, so many cases of indigestion are only symptoms of more serious trouble elsewhere in the abdomen that they should have proper investigation from the physician. Indigestion may point to a diseased gall bladder that may need surgical attention, to an ulcer of the stomach, chronic appendicitis, hookworm disease, anæmia, and various ailments. Certainly chronic indigestion in a person well into middle life or past, in what is called the cancer age, will bear investigation by trained hands.

For the simple indigestion that may come on after a full or heavy or highly seasoned meal a purgative to empty the stomach and intestines is helpful. For the so called acid stomach and water brash a teaspoonful of cooking soda or a teaspoonful of milk of magnesia are often efficacious. A teaspoonful of the aromatic spirits of ammonia by itself or combined with a teaspoonful of soda is a useful household remedy in expelling gas from a distended stomach. A diagnosis of acute indigestion as a cause of death is usually not satisfactory, for all too often it means some grave lesion outside of the stomach. For an acutely upset stomach with constant nausea and vomiting, a condition which is usually subsequent upon the ingestion of some irritating food or drink, the ingestion of copious draughts of warm water is usually efficacious in clearing the stomach of all food detritus and mucus, and usually will relieve the condition or at least give longer periods of rest between attacks. As soon as the stomach is retentive a purgative should be given. Often it is advisable to give an enema for its immediate effects. Ice in small amounts by the mouth will often help with the nausea. The application of hot or cold to the abdomen is often helpful in relieving attacks of pain of this type. The ice bag may be used or it may be necessary to resort to hot stupes. They are a useful household remedy. Flannel cloths are wrung out in boiling water to which turpentine has been added in the proportion of one teaspoonful to a quart. They are applied to the abdomen and renewed when they begin to cool off. It is best to cover them with a dry bath towel. Care must be taken not to burn the skin by keeping them on too long.

Diarrhea is dealt with in much the same way. Particularly in regard to the upset stomach, the administration of a purgative, the hot stupes for pain, and starvation for at least twenty-four hours afterwards is usually a good rule. After the stomach and intestines are well cleared by the purgative (castor oil is the best), the administration of bismuth subnitrate in 10 to 20 grain doses every two or three hours is advisable. It may be necessary to administer an opiate if the attack is severe. This is best done under a physician's guidance.

DIARRHEA IN YOUNG CHILDREN.

These same rules apply to babies, especially babies being fed on cow's milk or artificial food. An acute attack of vomiting with fever and diarrhea should call for the cessation of all food by mouth for at least twenty-four hours or longer, and the washing out of the stomach if possible, an immediate dosage with castor oil, or calomel. Water can be given freely, or else barley water, weak tea or albumin water may be administered. If the baby continues ill, further guidance at the hands of the family doctor should be sought.

CRAMP COLIC AND APPENDICITIS.

As for the various forms of cramps in the abdomen which have and are still being called cramp colic: Most of them usually begin with nausea and vomiting, then there is generalized abdominal pain, later it may center around the navel and later be localized in the right side, which is tender to the touch and pressure. Such an attack is all too apt to be an attack of appendicitis. The head of the house should not assume the responsibility of treating an attack of this nature, but should transfer it to his medical attendant.

POISONING.

An emergency which the layman is called to meet is that of treating a patient who has swallowed some poisonous drug or mineral. The first thing to do is to empty the stomach very promptly. This may be done by mustard water, warm salty water, or teaspoonful doses of the syrup of ipecac. For bichloride of mercury, which is all too common a poison, the whites of half a dozen or more eggs should be administered immediately. Carbolic acid is another poison quite commonly used. After emptying the stomach, if the acid was recently administered, whiskey is of benefit. Most hospital dispensaries wash out the patient's stomach with a saturated solution of Epsom Salts and depend on it rather than on the whiskey.

Oxalic acid closely resembles table salt in appearance and for that reason, if no other, should never be kept on the family medicine shelf. White wash scraped from the walls and promptly administered is the best emergency antidote for oxalic acid poisoning.

For laudanum and the various opiates the same rule applies, empty the stomach immediately. Keep the patient awake by slapping him with wet towels or walking him until the doctor arrives.

For the various other drugs and mineral poisons there is an antidote which would probably escape the layman's mind. The best rule under these circumstances is to empty the stomach, administer demulcent drinks, such as starch water, or the whites of eggs, until the doctor arrives.

For gas poisoning, electric shocks, and drowning, loosen the patient's clothing, get him in the open air, rub his limbs to help establish his circulation, apply artificial warmth in the shape of hot water bags, hot bricks or stones, or anything handy. If his lungs are full of water invert him and compress his thorax to give the water a chance to run out. Pull the tongue forward so as to open up the wind-pipe. For all three of these emergencies establish artificial respiration as soon as possible. It is a subject that should be taught in the public schools. The patient is placed on his back and a bundle of clothing is placed under the small of his back; the tongue is pulled forward; the person giving the respiration should be at the patient's head; he should grasp both arms just above the elbows and raise them from the patient's sides and extend them their full length over the patient's head. This movement is to fill the lungs with air. The arms should then be brought down to the patient's side, considerable pressure being made against the sides of the patient's chest. This movement is to expel the air. These movements should be repeated about fourteen times to the minute. They should be kept up for an hour at the shortest. Of course, the doctor should be summoned as soon as possible.

WOUNDS, CUTS, BRUISES, ETC.

All cuts, wounds and abrasions should be washed out with an antiseptic, such as the bichloride of mercury in the strength of one tablet to one quart of water. A clean bandage should be applied, and, if it is feasible, a sterile dressing should be used. For most families peroxide of hydrogen is a handy antiseptic and can be used in full strength in washing out wounds.

Sprains, especially if severe, are best treated by a physician. This applies to the ankle in particular, for here immediate strapping by the physician shortens the period of disability. All broken bones should have the care of a medical man. Hot applications, either as immersions in hot salt solution or towels wrung out in hot water, are helpful. Dressings of lead water and laudanum in a measure relieve the pain. Rest and elevation of the part will aid.

BOILS.

Practically all boils and carbuncles of any consequence at all need opening by the doctor or by trained hands. The constant possibility of blood poisoning should be before you, and for that reason, if for no other, exercise due cleanliness in treating them.

INSECT STINGS.

Bee stings and insect bites are common enough to demand attention. Ammonia water applied immediately will usually take away a large part of the sting. If possible extract the sting, which is often left in the wound. It is usually barbed and for that reason a little hard to extract. Pressure may be made with the barrel part of a key. A saturated solution of soda will give relief to the burning and itching.

SNAKE BITES.

Snake bites in some parts of our State are of common occurrence. Statistics place the mortality of rattlesnake bites at about 25 per cent, hence the necessity for knowing some first aid for them. Several tight bands or tourniquets should be tied at different levels around the extremity bitten; the wound should be laid wide open, preferably by a cross incision. The lips should be applied to the wound and as much of the poison as possible sucked out. One should hesitate about doing this if he has abrasions on the mucus membrane of the mouth or lips. The patient is usually somewhat prostrated by the poison and may need stimulation. Whiskey is usually at hand and may be administered in proper doses. It is worth noting, however, that it is not necessary to saturate him with whiskey and lower his resistance that much more. There have doubtless been cases which have been killed by too much whiskey. Of course, the doctor should be summoned. Ligatures around the limb should be loosened one at a time and the effect of the poison on the system noted. If there seems to be too much absorption they should be tightened up again. Remember not to leave them on too long, for gangrene might set in. On his African hunting trip Roosevelt carried the crystals of potassium permanganate with him for snake bites. It is recommended that they be rubbed into the wound after it has been laid open. Afterwards the wound is treated with ordinary surgical cleanliness.

BURNS AND SCALDS.

Burns and scalds come under the same head and are of daily occurrence in the household. Cleanliness in treating them should always be an aim. Carron oil, which is a mixture of equal parts of lime water and linseed oil, is certainly cooling and soothing on a burn, but is objectionable on the score, if on no other, that it is a dirty preparation and makes a dirty wound. A saturated solution of soda is as good a first aid dressing as you can apply, and it is probably as soothing as any. Various treatments are recommended, most of which are good. The blisters should be opened with a needle that is sterile and the area of burn cleaned with peroxide, which may be sprayed on with an atomizer and then washed off with a solution of boric acid. Wet dressings of salt solution, which is made up by adding one teaspoonful of salt to a pint of boiled water. may be applied on surgical gauze and kept moist thereafter. Boric acid may be used in the same manner. A one per cent solution of picric acid used in this manner is a popular treatment, but is not to be recommended for family usage on account of the toxic properties of picric acid. For a burn of any extent a physician should be called. Burns extending over one half the area of the body are usually fatal.

ACUTE INFECTIOUS DISEASES.

It is well for the head of the house to remember that most acute infectious diseases start with chill, fever, backache and headache, and, in children, with the added symptoms of nausea and vomiting. So I favor putting the clinical thermometer in the hands of intelligent heads of households, for often it gives information as to the true condition of affairs that can not be obtained otherwise. For a fever that persists and does not yield to the simple home remedies trained guidance should be sought.

For the acute eruptive diseases of childhood the physician should be called in for advice. Don't make the mistake of exposing all of the children to them, when one child has a case, for what may be simple for one may be fatal to another.

Convulsions in infancy and childhood usually mean some disturbance in the alimentary tract, the onset of some infection, or an epileptic tack. In later life they usually mean epilepsy or some brain lesion, or poison generated in the system from disease. Immediate purgation is called for in all cases. Castor oil for the children and salts for the adults should be administered immediately. Hot baths and hot packs and rot foot baths are usually efficacious in relaxing the patient. With a child who is subject to convulsions it is well to have on hand a bromide preparation, say 10 grains in a teaspoonful of peppermint water. Larger doses may be readily given. As bromide is rather slow in its action it is often well to have on hand a chloral preparation prescribed by a physician. This is to be administered when the child may have any threatenings of convulsions, as muscular twitching. Chloroform should not be administered by members of the family. For convulsions of any seriousness a physician should be summoned. With the epileptic type of spasms some object should be placed between the teeth to prevent biting the tongue.

TUMORS AND CHRONIC SORES.

Chronic sores, ulcers, tumors, skin eruptions, and discharges, especially in persons in middle life and past, should be investigated as to the possibility of cancerous trouble, pellagra, and other grave diseases.

ANAEMIA.

In our part of the world cases of anæmia should be investigated always for hookworm infection and malaria. It is best to seek medical assistance about them and their treatment.

Punishing Impudence.

A farmer driving along a country road was thus accosted by a young upstart: "Hello, Reuben, give me a lift to Hightown, won't you? I might as well ride as walk." And with that he climbed up into the farmer's wagon and continued to chatter, while the old man listened in silence. Finally he said: "It's a good thing I met you. Quite a way to Hightown, isn't it?" After they had gone a few miles further he said: "How far is it to Hightown, anyhow?"

"Well," said the old farmer, "the way we are going I should judge it's about twenty-four thousand miles, but if you were to git out and walk back I should say ten miles or so." *Youth's Companion.*

The Installment Plan.

Miss Coy: "Oh, what beautiful flowers! There's still a little dew on them."

His Nibs (absently-mindedly): "I know, but I'll pay it tomorrow." *Current Literature.*

La Grippe: "That disease which keeps you sick six months after you are well."—*"Mr. Dooley."*

Phil Armstrong says: "A short cut to fame—take patent medicine and send in your photo."

Parcel Post Rates.

The parcel post law which became effective January 1, 1913, provides:

"That hereafter fourth-class mail matter shall embrace all other matter, including farm and factory products, not now embraced by law in either the first, second, or third class, not exceeding eleven pounds in weight, nor greater in size than seventy-two inches in length and girth combined, nor in form or kind likely to injure the person of any postal employee or damage the mail equipment or other mail matter and not of a character perishable within a period reasonably required for transportation and delivery."

For the purpose of carrying this law into effect the United States is divided into zones with different rates of postage applicable to each, as follows:

Weight.	1st Zone.		2d Zone, 50 to 150 miles.	3d Zone, 150 to 300 Miles.	4th Zone, 300 to 600 Miles.	5th Zone, 600 to 1,000 Miles.	6th Zone, 1,000 to 1,400 Miles.	7th Zone, 1,400 to 1,800 Miles.	8th Zone, all over 1,800 Miles.
	Local Rate.	Zone Rate, 50 Miles.	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*	*Rate.*
1 pound	$0.05	$0.05	$0.06	$0.07	$0.08	$0.09	$0.10	$0.11	$0.12
2 pounds	.06	.08	.10	.12	.14	.16	.19	.21	.24
3 pounds	.07	.11	.14	.17	.20	.23	.28	.31	.36
4 pounds	.08	.14	.18	.22	.26	.30	.37	.41	.48
5 pounds	.09	.17	.22	.27	.32	.37	.46	.51	.60
6 pounds	.10	.20	.26	.32	.38	.44	.55	.61	.72
7 pounds	.11	.23	.30	.37	.44	.51	.64	.71	.84
8 pounds	.12	.26	.34	.42	.50	.58	.73	.81	.96
9 pounds	.13	.29	.38	.47	.56	.65	.82	.91	1.08
10 pounds	.14	.32	.42	.52	.62	.72	.91	1.01	1.20
11 pounds	.15	.35	.46	.57	.68	.79	1.00	1.11	1.32

The local rate is applicable to parcels intended for delivery at the office of mailing or on a rural route starting therefrom.

It will be observed that the rates of postage are largely reduced and that the limit of weight is increased from four to eleven pounds. Parcels will be delivered at all free-delivery offices and to patrons residing on rural and star routes; they may be registered and may be accorded special-delivery service on payment of the usual fees, and they may be insured against loss in an amount equivalent to their actual value, but not to exceed $25, upon payment of a fee of five cents. Distinctive stamps must be used on all parcels, but they may be mailed in quantities of not less than 2,000 identical pieces without stamps affixed, the postage being paid in money.

TABLE OF STAGES AND DURATION OF INFECTIONS.

Diseases.	Usual Time from Contraction to Beginning of Eruption or Appearance of Characteristic Symptom.	Usual Time from First Symptom to Beginning of Eruption or Appearance of Characteristic Symptom.	Usual Time from Beginning of Eruption to Cessation of Fever.	Usual Time from Appearance or Characteristic Symptom Till Patient Ceases to be Infective.
Smallpox	13 days (range, 7 to 21 days)	2 days (range, a few hours to 7 days.)	14 days	56 days*
Modified smallpox	13 days (range, 7 to 21 days)	2 days (range, a few hours to 7 days.)	14 days	35 days*
Chicken-pox	13 days (range, 4 to 17 days)	2 days (range, a few hours to 3 days.)	5 days (range, 3 to 7 days)	17 days*
Measles	14 days (range, 7 to 21 days)	4 days (range, 1 to 9 days)	6 days	27 days*
German measles	14 days (range, 10 to 20 days)	1 day (range, *nil* to 3 days)	7 days	14 days*
Scarlatina	4 days (range, a few hours to 14 days.)	1 day	7 days	49 days*
Diphtheria	5 days (range, 1 to 14 days)	2 days (range, a few hours to 4 days.)	14 days	28 days*
Idiopathic erysipelas	5 days (range, 2 to 14 days)	1 day	14 days	35 days*
Typhus fever	19 days (range, a few hours to 28 days.)	7 days (range, 3 to 7 days)	7 days (range, 7 to 14 days)	21 days*
Typhoid fever	21 days (range, 1 to 28 days)	7 days (7 to 12 days)	21 days (range, 14 to 23 days)	28 days*
Mumps	18 days (range, 8 to 25 days)	4 days	7 days	21 days*
Whooping cough	10 days (range, 7 to 14 days)	10 days (range, 2 to 14 days)	10 days (usually when "whoop" appears.)	90 days*

*In mild epidemics less. If the disease has been quarantined the quarantine should not be raised until permission is given by local health department.

LIST OF FREE PUBLICATIONS

Besides the monthly HEALTH BULLETIN, the State Board of Health issues free special bulletins on the following subjects:

No. 1. *Tuberculosis.*

No. 2. *Compilation of the Public Health Laws of North Carolina.*

No. 3. *Protection of Surface Water Supplies* with drainage area of less than 20 square miles.

No. 4. *Protection of Surface Water Supplies* with drainage area of from 20 to 50 square miles.

No. 5. *Protection of Surface Water Supplies* with drainage area of from 50 to 100 square miles.

No. 6. *Protection of Surface Water Supplies* with drainage area of over 100 square miles.

No. 7. *Rules and Regulations Governing Quarantine and Disinfection.*

No. 8. *Typhoid Fever.*

No. 9. *Medical Inspection of Schools and School Children.*

No. 10. *Care and Feeding of Babies.*

No. 11. *The Plague of Flies and Mosquitoes.*

No. 12. *Residential Sewage Disposal Plants.*

No. 13. *Sanitary Privies.*

No. 14. *Hookworm Disease.*

No. 15. *Malaria.*

No. 16. *Watershed Inspector's Guide.*

No. 17. *Watershed Inspector's Report.*

Any of these bulletins will be sent free, upon request, to any address in the State.

You can doubtless render a great service to some of your neighbors or friends by requesting this office to send them copies of such special bulletins as would probably be of interest or benefit to them. Request bulletins on tuberculosis, typhoid, etc., sent to homes in which there are cases of these diseases. It may mean the saving of much suffering and even life itself. *Can't you do it now?*

THIS BULLETIN WILL BE SENT FREE TO ANY CITIZEN OF THE STATE UPON REQUEST

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"Public Hygiene is built upon and directed by, and is everlastingly in debt to vital statistics. * * * Every wheel that turns in the service of public health must be belted to this shaft."—*Dr. John S. Fulton, of Maryland, Secretary-General Fifteenth International Congress of Hygiene and Demography.*

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NO BOOKS KEPT

By Which State Board of Health Can Show What is Being Accomplished With Public Health Funds

In the timely and constructive editorial entitled "A Program of Constructive Legislation," which appeared in the *News and Observer* of December 12th, health legislation is emphasized as one of the pressing needs of our State. It is pointed out that the particular health legislation needed is "a thoroughgoing system of registering births, deaths, and diseases."

Without such legislation the State is fighting preventable disease, its foe that annually claims 20,000 human lives, in ambush. We blaze away here a little, there a little, while the shafts of death fall thick amongst us, coming we know not whence. When a surgeon rushes into a railroad wreck he wisely attends first to those whose lives are in the greatest danger. A health department should do likewise—it should direct its lifesaving efforts into those places where its work is most demanded—by what?—by high death rates. Where are such places in North Carolina? What section of our State, what county is sickest? Or, to recast that question, what sections of the State or what counties of the State have the highest death rate from all causes? What county has the highest tuberculous death rate? In what county is typhoid fever most rife? In what counties are deaths of children from the contagions most frequent, or, in other words, in what counties are proper quarantine laws most needed? No man knows nor can know, without a registration law, the answer to these vital questions. The State Health Officer, in treating disease of unknown location in the body politic, is like a doctor treating a patient with a complication of diseases, knowing neither which organ is most involved nor which of the group of diseases he should treat first.

Another reason for a registration law: As the first step toward spiritual salvation is a recognition of one's sins, so the first step toward sanitary salvation is the recognition by the sick town or county of its sickness. It is characteristic of communities with death rates far in excess of the average that they do not know that they are sick. Therefore, the health officer's first duty in treating a sick community or county is to restore consciousness. The restoration of sanitary consciousness is effected through the registration law as follows: A chart is prepared, displayed and, if necessary, published, showing in two parallel columns the total number of deaths annually per 1,000 of the population, and the number of deaths annually per 1,000 of the population from the more important preventable diseases of the sick community and the average community. The facts of the chart may not start to ferment at once, but sooner or later they will break into the editorial sanctum, they will even invade the holy precincts of the pulpit, they will get into teachers' meetings, break out in schools, pervade and eventually move the sick community or county. Such a statement of unhealthfulness based upon undeniable facts is necessary to secure the interest and coöperation of the population of a sick community or county. Only a registration law can furnish the facts necessary for such sanitary awakening and repentance.

Yet another and even a more important reason than those given for registering births and deaths in North Carolina: Under present conditions in this State, with no registration of births and deaths, neither the people nor their State Board of Health can or do know what is being accomplished with the public funds expended in health work. This ought not to be so. For, in the very nature of the case, that department of government concerned directly with human life, notwithstanding the fact that the principles on which it operates are complex and difficult of mental grasp, is more than any other department of government subject to the control of the people. A good citizen may not be able to say that his State Department of Education, or his State Insurance Department, or his State Corporation Commission is efficient or not, but he should be able to say that his Department of Health is efficient or inefficient. This requires no special training. The death rate test is the simple and true efficiency test that any one can apply to a health department. The differences in the death rate (that is, the annual number of deaths per 1,000 of the population from all causes, and annual number of deaths per 1,000 of population from such special causes as the more important preventable diseases), at the time the health department assumed control, and at the time it is judged, tells, to the decimal point, what it has accomplished in saving human life. It is of no consequence how much literature a health department may prepare and distribute, how many instructive addresses on health topics it has given, how many health exhibits it has held, how many hookworm treatments it has administered, and how many other things it has done, if these things are without perceptible effect on death rates; the method of health work is incidental; the effect, a reduction of death rates, is fundamental.

At present the only registration law in North Carolina is a law that applies to about one-sixth of the State's population—to the towns of the State—that requires only death registration, and that is incomplete in its operation for lack of funds with which to enforce it. There is no State registration law and no established State death rates. It is, therefore, impossible to say what the money expended by the State in the past for health work has done. The State Board of Health keeps an account of the money turned over to it, an account of the items for which the money was expended, but as to the *ultimate* purchase for which that money was expended, as to the number of human lives saved and the number of days of sickness it prevented no man knows. The State Board of Health under the present system of work is like a firm that has a certain sum of money turned over to it with which to do business; the firm keeps an account of its expenditures, but no account of its receipts, and no one can tell whether it is being operated at a profit or a loss. If a man should do business as the State does health work, sensible people might call him a very cruel name.

There are many other strong reasons, principally of a legal nature, why we should make permanent official record of the births and deaths of our people. An official record of the circumstances of every death, signed by a physician or coroner, will prevent hasty burials of bodies of persons who, after decomposition has done its work, are discovered to have died under suspicious circumstances. Without registration of births, children are sent prematurely, by unscrupulous parents, under the yoke of servitude; without a system of birth registration the compulsory school law, which in the next six years will apply to a large part of the population of the State, will prove defective at its very source, in the matter of determining by official record the ages of children; without registration of births, justice often blunders or falls down altogether in determining questions of citizenship, suffrage, and marriage privileges, in awarding inheritances and in fixing damages.

Finally, when a pureblooded horse or cow or dog or hog is born, its birth is registered, even if its birthplace is in North Carolina. Historians tell us that our children are of the purest blooded white stock on the Continent. Are they not entitled to as much consideration in the matter of birth registration as we give fine blooded hogs and dogs? Gentlemen of the General Assembly of 1913, it is for you to say whether North Carolina children are entitled to registration. Their case is with you.—*News and Observer.*

THE SMALLPOX SEASON HERE

The North Carolina No-quarantine Law

As the season for the prevalence of smallpox approaches we are receiving an increasing number of letters inquiring about public measures for the control of the disease. We can not answer these letters more clearly than we have the letters from Mr. Watson in the following correspondence. We, therefore, republish this correspondence for those who may be interested in this disease from a public standpoint.

Just one word more: While the State Board of Health, and while practically all the health officers of North Carolina are opposed to the quarantine of smallpox and advise against it, any county or town in the State has a legal right to enforce quarantine against the disease, if it so desires:

BURNSVILLE, N. C., October 10, 1911.

Dr. W. S. Rankin, Raleigh, N. C.

DEAR SIR:—We have an epidemic of smallpox in Yancey County and some of the public schools have had to close. We have two high grade schools in this town and we are expecting that these will be broken up unless some quarantine work is done. I have just had a talk with the Superintendent of Public Health and he tells me that he is under orders not to quarantine smallpox, but measles and other diseases.

It seems to me that this rule means that all the cranks and people who would rather go to the chain gang than get vaccinated will scatter this disease over the county.

Dr. Gibbs is an efficient physician and willing to do his duty, but in the face of express instructions from the State Board not to quarantine he feels loath to do it.

Is there no help for us? Shall we have to take our shot guns to prevent that class of folks who do not care for their own health from scattering this disease over the country? I appeal to you to give Dr. Gibbs such instructions as will prevent the spread of this disease.

Let me hear from you at once please, if we are to have this method to continue.
Yours very truly,
(Signed) E. F. Watson.

October 13, 1911.

Mr. E. F. Watson, Burnsville, N. C.

My Dear Mr. Watson—I enclose marked copy of the law governing the control of smallpox.

While the State Board of Health does not believe in the quarantine of smallpox there is nothing in the laws of the State of North Carolina to prohibit any county or town from quarantining this disease. See Section 9, Chapter 62, Public Laws of 1911. The matter is entirely within the hands of your county commissioners. If they want to protect their own people and their own schools they should pass a ruling under the aforesaid section prohibiting any child from entering school who has not had a case of smallpox or who has not been successfully vaccinated, or if you prefer, and the people of your county prefer to quarantine the disease, and thereby give what safety you can to an unvaccinated population, and, thereby, encourage your people to remain unvaccinated, and, thereby, augment and maintain your smallpox liabilities, you have the right to do it under the State laws, but such action would be contrary to the advice of this Board. We believe in vaccination, compulsory by Government officials, but if not, compulsory under the penalty that God imposes on the man who persistently, after a hundred years' experience with vaccination, refuses to protect himself. We do not believe in the quarantine of smallpox. Let me make it plain to you then that you and your people are amply provided with all necessary authority in the aforesaid sections to take care of yourselves by exercising the fundamental principle of democratic government—self-control—and that the State of North Carolina will put no obstacle in your way if you want to maintain your smallpox liabilities by the quarantine of the disease. Unless your board of County Commissioners shall quarantine the disease or pass a compulsory vaccination ordinance, Dr. Gibbs (who I agree with you is making you an excellent health officer) will carry out the regulations of the State Board of Health—a marked copy of which also see.

Get one fact clearly in your mind and keep it there, that there is but one remedy against smallpox, and that is vaccination. Quarantine is only a temporary expedient that maintains the fuel on which the disease feeds and postpones the evil day. And remember, too, that you do not need to waste any sympathy over the fellow that gets a case of smallpox. There are thousands of others that are dying every day from diseases against which we have no remedy that the individual himself can apply, who need your sympathy. The man who gets smallpox has neglected an important civic duty—vaccination—by which his efficiency as a citizen would be better maintained, and by which he might not become a public health nuisance to his community.

If you desire to use this letter for publication you are at liberty to do so. It might be worth something in calling attention to the important factor of individual responsibility in the proper control of smallpox.

Please read marked copies of literature enclosed; turn some of it over to the editor of the local paper.

Yours very truly,
(Signed) W. S. RANKIN,
Secretary.

October 21, 1911.

Dr. W. S. Rankin, Raleigh, N. C.

DEAR DOCTOR—Your favor to hand. I most heartily approve your course. I was in error. Your theory is the only consistent one and if adopted will do the State more good than all the quarantine that could be invoked.

I am having your letter published in our county paper.

Yours very truly,
(Signed) E. F. WATSON.

October 26, 1911.

Mr. E. F. Watson, Burnsville, N. C.

MY DEAR MR. WATSON—I beg to acknowledge, with sincere appreciation, the receipt of your letter of the 21st instant. It is always a pleasure to come in contact with a man who has the breadth of mind to consider an important question from both sides. Many states are using two methods to prevent smallpox, when the health officers themselves admit that quarantine can not stop an epidemic of smallpox, and that vaccination is the only sure prevention. It confuses the people by placing before them two remedies for one condition, and especially is the practice most unwise when it is remembered that one of the remedies—quarantine—is a very uncertain remedy, and at best only a postponement of the infection.

Hoping to have the pleasure of meeting you at some future time, I am

Yours truly,
(Signed) W. S. RANKIN,
Secretary.

GROWTH OF WORK OF THE STATE BOARD OF HEALTH

The word "growth" is used advisedly here. The public's appreciation of the value of an institution is expressed in the increasing demands made upon it. If an institution is of a public nature, and complies with the demands of its constituency, the work of the institution, the force engaged to do the work, and the money necessary to obtain the requisite force for the growing work, must be gradually increased; in other words, the growth of a useful public institution is as natural as that of a plant and can not be retarded without interfering with a naural and useful process.

The subjoined tabulations show the growth of the North Carolina State Board of Health:

Growth of Work of the Executive Office

(On a revenue basis of $12,000.)

Nature of Work	1909	1910	1911	1912
Correspondence*	2,544	2,826	4,437	6,075
Per cent. increase		11%	57%	36.9%
Bulletins	3,000	11,500	20,000	40,000
Per cent. increase		283%	73.8%	100%
Press Service Weekly	0	3 Mos.	3 Mos.	12 Mos.
Daily	0	0	0	6 Wks.
Treasurer. Fund handled	$11,940.06	$27,447.57	$46,128.79	$55,245.42

*This does not include circular letters.

Growth of Work of the State Laboratory of Hygiene

(On a revenue basis of $10,000.)

Years.	*Specimens Examined.*
1908	1,569
1909	2,902
1910	3,702
1911	4,939
1912	5,085

(In addition to these specimens 38,648 specimens of feces were examined in this laboratory for intestinal parasites. These examinations were made in large part by microscopists employed by the Hookworm Commission, but they were under the direction of the Director of the Laboratory.)

Years.	*Pasteur Treatment.*
1908	42
1909	157
1910	159
1911	151
1912	224

Diphtheria antitoxin has been distributed by the laboratory since August, 1909. The amount distributed annually is as follows:

Years.	*1,000 units.*	*3,000 units.*	*5,000 units.*	*Totals.*
1909	821	628	554	2,003
1910	457	492	583	1,532
1911	1,171	1,015	1,134	3,320
1912	1,553	1,143	1,630	4,326

Growth of Work of the Hookworm Commission

(On a revenue basis of $25,000.)

	1910	1911	1912	Total
Number of county infection surveys for hookworm disease		21	23	54
Number of county sanitary surveys for hookworm disease		44	20	64
Number of persons treated by physicians and reported	8,000	16,709	15,859	40,568
Number of persons treated by State Board of Health field staff		29,172	42,132	71,304
Number of persons treated by physicians and field staff	8,000	45,881	57,991	111,872
Number of microscopic examinations made	7,949	37,328	135,876	181,144
Number of counties making appropriations for free dispensaries		17	43	†60
Amount appropriated by counties*		$4,300.00	$9,579.90	$15,579.90
Amount of county funds actually spent		3,315.66	8,315.66	$11,670.57

*Still available, $1,750.00. †Counties worked.

NOTE:

The county surveys were completed in part in 1911 and partly in 1912. The number of microscopic examinations rather than the number of persons treated denotes the growth in the work. To illustrate: In 1911 out of 37,328 examinations, 29,172 persons were treated; whereas in 1912 out of 135,876 examinations only 42,132 were treated. In 1911 the work was conducted in the most heavily infected areas; in 1912 in lighter infected areas. More time is required to examine a person who is not infected than one who is infected, and on the average is it most difficult to get a large attendance on the dispensaries in areas where the infection is lighter.

CLIPPINGS

Public Health Can no Longer be Neglected

The subject of the public health is of importance second to none. North Carolina, in common with all civilization, is awakening to the supreme value of proper legislation in preventing disease and, therefore, saving life and efficiency. We must have in North Carolina a thoroughgoing system of registering births, deaths and diseases. Until we shall have done this we can not know what the conditions are in respect to sanitation and the treatment of contagious diseases. Nor can we know whether the means we are employing are efficient or not. Nobody knows what the death rate in North Carolina is. Nobody knows whether our sanitary measures in North Carolina are effectual or not. This system of birth, death and disease registration is, therefore, fundamental to the great economy of physical efficiency and the great cause of preventing disease and saving life in North Carolina. Related as it is to the very root of the common welfare, it can not longer be neglected without inviting a just reproach upon those who have the power to institute the system. —*News and Observer.*

How Many Unnecessary Deaths in Your County?

What might be accomplished in every Southern State by properly supported State and county boards of health is indicated by what has been accomplished by New York City. Through improvements in sanitary regulations, greater knowledge of the laws of hygiene and numerous other activities of the health boards, the death rate per 1,000 population has been reduced from 36.31 in 1866 (the year its health department was organized) to 15.13 last year. In other words, comparing the death rate of the year 1866 with the present death rate, we find less than half as large a proportion of deaths as then. Or, if we assume that 1866 was an exceptional year, and take the entire ten-year period—1866-'76—we still find that the death rate has been reduced about 40 per cent.

A man who opposes adequate appropriations for public health, if he is ignorant, may be guilty of unintentional manslaughter. But when we find a man who knows how many lives of men and women and little children might be saved if we had proper health officers in every county and State—for such a man who knows what health work would accomplish, to oppose adequate appropriations stamps him as almost guilty of murder.

New York City, 1866: the health department just organized; no work accomplished, 3,631 new graves in the course of the year for each 100,000 population.

New York City, 1911: Health department thoroughly organized and effective at work—only 1,513 new graves in the course of the year for each 100,000 population.

Lives saved in New York City, largely as a result of public health work, last year (estimating population at 5,000,000), 55,900.

How many unnecessary deaths are there in your county?—*Progressive Farmer.*

How About Your Candidate for the Legislature?

What is your candidate for the Legislature going to do to help build up your county? That is the question for you and all other voters to consider. It doesn't matter how well this Mr. Candidate can argue about the tariff, for he is not going to have anything to do with making the tariff laws. It doesn't matter how eloquent he gets arguing about Wilson, Roosevelt, or Taft, because their fates will be decided before the Legislature meets. It doesn't matter how good a handshaker he is, because it is going to be his duty to make laws and not to hold receptions. It is high time for us to begin selecting candidates for different reasons than those given in the following paragraph in the Asheville *Gazette-News:*

"A candidate for the Legislature before the Democratic primaries said he was asking his friends to support him for this office. Asked why he sought it he replied that he had always been a good Democrat and wished his children to be able to say their father had been a member of the General Assembly."

And our Asheville contemporary goes on to say:

"If we had an intelligent political system the people would be fully advised as to how much attention candidates for the Legislature had given to the following subjects, and what conclusions they had reached:

"Better teachers, practical teaching, better salaries.

"Vocational equipment for town and rural schools.

"Medical supervision of schools.

"Health department work, State and county; the general sanitation problem.

"The short ballot.

"The Torrens land title system.

"The technique of road building.

"State aid for highways.

"Economic taxation.

"Inequalities of taxation.

"Forest and water conservation, as applying to local conditions.

"Economics in State and county government.

"School text-books."—*Progressive Farmer.*

Why Smallpox is Not Quarantined

Editor Journal: There appeared in the columns of the *Journal* yesterday morning a query in regard to the abolition of quarantine against smallpox. As the writer of this query evidently does not understand the situation, and as I have found there are many others who do not understand it, I take the liberty, as a member of the Craven County Board of Health, to herewith furnish the explanation.

The State has been for many years expending $50,000 annually enforcing quarantine against smallpox. Whom did this quarantine protect? Not you, who have been vaccinated, but the unvaccinated class, those who, from ignorance or other less pardonable reasons, refuse to be vaccinated. From whom did the State derive the money to pay for this quarantine? From you who have been vaccinated, and, therefore, need no protection. The unvaccinated class in practically all instances is made up of those who do not pay taxes. You see, then, the answer to the query is simple.

Vaccination is an absolute protection against smallpox. If you have been vaccinated you need fear smallpox no more than chickenpox. If everyone were vaccinated smallpox would be wiped off the face of the earth. It is perfectly possible for everyone to be vaccinated. This county, through its County Superintendent of Health, will vaccinate any one free of charge. Vaccination is practically devoid of danger; a suckling infant may be vaccinated with impunity, and as a matter of fact this is really the best time to vaccinate, as the reaction at this age is comparatively slight.

Taking all these things into consideration, why then should you, who pay the taxes and have been vaccinated, be taxed to protect those from smallpox who pay practically no tax, and who foolishly refuse to be vaccinated? The State has decided that it has no right to thus burden you unnecessarily, and it has, therefore, abolished quarantine against smallpox. It is anticipated that by doing this, not only will the taxpayers of the State be relieved of the cost of the quarantine, but also more individuals will now be vaccinated than formerly to protect themselves against the disease and that, therefore, the incidence of smallpox will be considerably decreased.

When a case of smallpox occurs now in any community in this State, it is the duty of the County Superintendent of Health to put a placard on the house in which the case is confined, and to notify the public of the existence of the case and its location. It is then "up to" the unvaccinated individuals in the community to take their choice between vaccination and protection from the disease, or remaining unvaccinated and rendering themselves liable to infection.

RICHARD N. DUFFY, M.D.,
Member Craven County Board of Health.
—*New Bern Journal.*

Smallpox Reciprocity

At the offices of the Public Health Service we met two men from New Hampshire. They had been having trouble with smallpox. Cases, it seems, would persist in coming over from Canada and "starting something" in the United States. They wanted it stopped. That was reasonable. But how were they to do it? That was the question. They seemed to think it could be done. And what they wanted to know was *how to do it.*

To be perfectly frank, we would like to know that, too, but we have long since despaired of ever finding it out. It didn't seem to occur to them that New Hampshire was passing smallpox back to Canada too. Now there is a case of practical reciprocity. The United States sends smallpox to Canada, and Canada in turn sends it back. Neither side ought to kick since they both come out even to say the least.

It happens this way: An unvaccinated person is exposed to smallpox and contracts it. He doesn't know that he has contracted it. No one knows. No one can tell that he has smallpox in his system till it develops. That will be one to three weeks later. During this one to three weeks he looks as innocent as the rogue in an amateur play. Why, certainly, he can come from Canada, or go from New Hampshire to Canada. Why not?

There is only one way to stop it—let no one cross the line that is not vaccinated. That will checkmate it. For a vaccinated man never starts smallpox. That is out of his line.—*Florida Health Notes.*

Dr. Osler's Challenge to the Anti-vaccinationists

"A great deal of literature has been distributed casting discredit upon the value of vaccination in the prevention of smallpox. I do not see how any one who has gone through epidemics as I have, or who is familiar with the history of the subject, and who has any capacity left for clear judgment, can doubt its value. Some months ago I was twitted by the editor of the *Journal of the Anti-vaccination League* for 'a curious silence' on this subject. I would like to issue a Mount Carmel-like challenge to any ten unvaccinated priests of Baal. I will go into the next severe epidemic with ten selected, vaccinated persons and ten selected unvaccinated persons—I should prefer to choose the latter—three members of parliament, three anti-vaccination doctors, if they could be found, and four anti-vaccination propagandists. And I will make this promise—neither to jeer nor jibe when they catch the disease, but to look after them as brothers, and for the four or five who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration."—*American Magazine.*

"Does God Fix the Death-rate?"

A broadminded clergyman in his Tuberculosis Day sermon propounded this question and reached a conclusion decidedly negative. "God does not fix the death rate. Who does then? We all do."

Those theologians aid high death rates who ignore the demonstrated facts of preventable disease and seek to perpetuate the medieval superstition that infections are the Almighty's merited scourge. Laymen who flout the scientific proof that tuberculosis is curable and can be eliminated from human experience, or who disparage a tuberculosis propaganda as of no personal concern to them, help to cause the death of a consumptive every three minutes in the United States. Councils and legislatures which will not appropriate funds sufficient for the fight which health boards would wage against the Great White Plague are largely responsible for the death of ten thousand a year, twenty-seven deaths every day, in one city alone. Those who disregard antispitting ordinances and the like help to send the death rate upward. Housewives whose culinary efforts produce dyspeptics directly and drunkards indirectly give far more impetus to the upward trend of the death rate than most of us imagine. Venders of "patent medicines" and consumption cures who fleece their victims until the latter have passed far beyond the incipient stage in which physicians could have helped them—such nostrum fakirs have a full share of responsibility for the thousands on thousands of deaths from tuberculosis throughout the country. Those who draw profit from feeding the poor on adulterated food, "rots and spots," and fowls dead in storage several years back, have a similar responsibility for a high death rate.

A "league for medical freedom" organized to prevent the wise centralization and coördination of health activities and to oppose the inspection of schools and schoolchildren likewise helps to keep the death rate high. Those who overwork women and children in factories have a heavy share of responsibility for holding the death rate at a high level; so also do those employers who require men to work at dangerous trades under intolerable conditions, such as those which in some trades hold the consumption rate above 80 per cent. Houseowners who provide dark, insanitary, pestridden tenements have no little part in increasing the death rate. The Christian Scientists and other faith "healers" who close their eyes to the possibilities of material aid, that may often so potently be added to the psychotherapy they are employing, swell the death rate. Wellmeaning mothers, who believe that they are able to bring up their children in defiance of the newfangled notions of hygiene spread by physicians and visiting nurses, help to keep the death rate high. Most important of all, incompetent and careless doctors swell the death rate. For these we as a profession are directly responsible, whether they are untrained men turned out by low-grade medical schools, or members of the profession who have failed to keep up with scientific progress and who have become incompetent through inertia and laziness. All these, by their carelessness, indifference and ignorance, jointly increase the death rate, which competent and conscientious physicians, sanitarians and reformers are fighting to lower.

We have not the right to blame a cruel deity for deaths which are actually due to crass stubborn ignorance, inhumanity and the refusal to exercise the "common sense which is also an inspiration from the Almighty." A weeping mother told a famous physician that it had pleased Providence to take her baby from her. "Providence had nothing to do with the matter," replied the physician; "it was bad milk that killed your baby." We can not escape some share of the joint responsibility of fixing the death rate, but we can choose to be on the side of the forces that are bringing it down instead of those that are sending it up.—*Journal American Medical Association.*

The Elimination of Feeble-minded Strains

After four years' investigation among the population of England and Ireland the Royal Commission compiled statistics[1] which make it evident that the feeble minded mothers of Great Britain have proportionately twice as many children as the normal. Field workers in this country encounter a similar condition. In the history of the Kallikak family, to which we recently referred,[2] it is stated that there are Kallikak families all around us and that they are multiplying at twice the rate of the general population.[3] This is largely accounted for by the fact that feeble-minded men and women are lacking in sex control. The result of research work by the Department of Public Charities in Philadelphia[4] also confirms the opinion that the rate of propagation of the feeble-minded is far greater than that of the normal, taking all classes together, though probably not so much in excess of the rate among the poorest and most irresponsible classes of the population taken by themselves. It should be noted, of course, that the birth rate among the very poor and the feeble-minded is not an accurate index of permanent increase since the low mental or financial status of the parents lessens the children's chances of survival. The infant death rate in the illegitimate Kallikak line, for instance, was about six times as great as in the legitimate line.

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[1] Report of the Royal Commission on the Care and Control of the Feeble-Minded, VIII, p. 189.

[2] A Natural Object-Lesson in Heredity, editorial, *The Journal, A. M. A.*, Oct. 26, 1912, p. 1544.

[3] Goddard, Henry H.: The Kallikak Family, p. 71.

[4] The Degenerate Children of Feeble-Minded Women, Philadelphia Department of Public Health and Charities, 1910.

Still, the fact that such defective lines are able to increase at all and to perpetuate themselves for generations is sufficiently disquieting. It is notorious that the offspring of feeble-minded parents are especially liable to inherit the defective mentality. According to Goddard,[5] about 65 per cent of all the feeble-minded owe their condition to heredity. It thus becomes apparent that the one great problem in the prevention of feeble-mindedness is the prevention of reproduction by those who are thus afflicted.

Many tentative experiments have been made along the line of sterilization. Indiana, Washington, California, Connecticut, Nevada, Iowa, New Jersey, and New York have all passed laws which provide for some form of sterilization of feeble-minded and certain criminal types. Pennsylvania is prevented from having such a law only by the Governor's veto of the bill. Kansas and Nebraska have both made experiments with this method of dealing with sexual offenders. For political reasons both of these States have had to abandon the practice at least temporarily. The New Jersey law, though far-reaching and carefully planned to avoid abuse while lending itself to the aid of scientific research, has not been in effect long enough to warrant conclusions as to its practical outcome. Indiana has given the sterilization plan the most thorough trial of all. In that State the practice of vasectomy on certain criminal types has been legalized for the last seven years. In the reformatory at Jeffersonville about 300 men have been thus operated on.

The fact that the operation was not looked on with disfavor by those who were subjected to it has been urged as an argument against its practice. It has been contended that libertinism and venereal disease would be greatly increased if the liability of parentage were entirely removed while the desire and ability to cohabit remained the same as before the operation. While this argument at first sight appears to be reasonable it fails to take into account the fact that the sense of moral responsibility does not exercise a restraining influence on the conduct of the feeble-minded. Although their sex control would be no better after vasectomy than before, it would be no worse for the simple reason that persons of this class have no idea of sexual morality at any time. Therefore it follows that, however strong the moral argument may be against vasectomy when performed on men of normal mentality, it is not valid when applied to the feeble-minded. The objection has also been urged that any sterilizing operation would fall under the head of cruel and unusual punishment, and on this account the practice is at present in abeyance in more than one State pending the outcome of supreme court decisions on the constitutionality of the laws which have provided for such operations. The Supreme Court of the State of Washington has declared constitutional the law of that State providing for the sterilization of criminals.

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[5] Goddard, Henry H.: The Menace of the Feeble-Minded, Pediatrics, June, 1911.

When the whole subject is viewed from a practical point of view the arguments for sterilization of the mentally defective seem greatly to outweigh the sentimental reasons advanced against it. Many inmates of institutions for the feeble-minded could be kept safely at their homes and at least help to earn their own living, were it not for the opportunity to reproduce their own kind which such liberty would give them. Although segregation of this class during the whole of the reproductive period is effective in its results, it carries with it a financial burden which seems unnecessarily large. Considered in all its various aspects it would appear that the most practical plan for the elimination of the feeble-minded strains should judiciously combine the methods of segregation and sterilization.—*Journal American Medical Association.*

Health for Sale

One of the most interesting and important papers presented before the Fourth National Conservation Congress, which met last week in Indianapolis, was written, not by a physician or a sanitarian, but by a business man, Mr. E. E. Rittenhouse, of the Equitable Life Assurance Company. An abstract of his address appears in Society Proceedings in this issue. Mr. Rittenhouse, in the opening paragraphs of this address, recognized the crucial point in the present situation. He said: "It takes money to carry on a great educational movement and it takes money to conduct a public health service. The war between preventable disease and death is therefore a struggle between the dollar and the death rate." These words should be placed before every citizen, for his instruction and as a warning. With our present day knowledge of disease, good health is a commodity which can be bought, if our cities, counties and States are willing to pay the price. For $1.50 per capita per year any community can practically banish those diseases which we now have the means of preventing and can greatly reduce the number of deaths from all causes. One dollar and a half per year! Not quite half a cent a day to save life from destruction by known causes! Three cents a week, twelve and one-half cents a month, to protect each man, woman and child from disease, which we know how to prevent and which we know will exact a toll of many lives during the next year and all succeeding years until proper preventive methods are inaugurated! A pitiably small sum, one thinks. Yet how much are our most advanced commonwealths spending for this purpose? Pennsylvania heads the list with 48 cents per capita per annum; Arkansas, at the bottom, does not spend a cent; New York spends 1.7 cents; Massachusetts, 4.2 cents; Indiana, 1.8 cents; and so on. In 1911 fifty of the largest American cities with a total preventable death list of 117,724, spent an average of 30 cents per capita to prevent disease, and $1.65 per capita to prevent fires. If we could have in every city as good a sanitary service as we now have fire protection, many lives that are now needlessly sacrificed could be saved. The people can have such protection if they want it and if they will pay for it. Safety from disease can be obtained just as we obtain safety from fire and from thieves. Health can be secured if society will foot the bill.—*Journal American Medical Association.*

AN EXPERIMENTAL STUDY OF RACIAL DEGENERATION IN ANIMALS TREATED WITH ALCOHOL.*

By Charles R. Stockard, Ph.D., New York.

Schweighofer has recorded an interesting individual case. A normal woman married a normal man and had three sound children. The husband died and the woman married a drunkard and gave birth to three other children; one of these became a drunkard, one had infantilism, while the third was a social degenerate and drunkard. The first two of these children contracted tuberculosis, which had never before been in the family. The woman married a third time and by this sober husband she again produced sound children.

This is an important human experiment. The female was first tested with a normal male and gave normal offspring; when mated with an alcoholic male the progency were defective as a result of his poisoned condition. She was again tested with a normal male and found to be still capable of giving sound offspring. A number of such cases are on record.

The experiments here recorded have been undertaken in order to ascertain whether alcohol did exert a marked influence on the germ cells and developing embryos of animals, and, if possible, to demonstrate the nature and mode of action of this influence.

The animals are first tested by normal matings and found to produce normal offspring. The alcoholic treatment is then begun on a given number of individuals and males and females mated in different combinations according to whether they are alcoholics or normal.

Alcohol is administered to the guinea pigs by inhalation. At first it was given with the food, but the animals did not relish it and therefore took less food. By the inhalation method, forced feeding was avoided that would have upset the animals so that the results might have been modified by their poor bodily condition.

The experiments have been conducted on guinea pigs, since they breed fairly rapidly and rear their young without much difficulty in the laboratory. Strong healthy stock has been chosen and the animals have been carefully handled. All have remained in vigorous health and most of them have increased in size and fattened during the progress of the experiment. No structural changes were found in any of the animals examined even after fifteen months of treatment. Their general health and behavior indicated that they were in good condition. One cannot claim therefore, that this treatment is greater in proportional amount than the alcohol a human being often takes. The fact is that these animals have never been completely intoxicated, but receive only enough alcohol six times a week to affect their nervous states. They may be compared to a toper who drinks daily but never becomes really drunk. The only indication of the effects of the treatment is shown by the quality of the offspring they produce.

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* Abstract of an article in the *Archives of Internal Medicine*, October, 1912.

Fifty-five matings of treated animals have been made. Forty-two of these have now reached full term and are recorded. From forty-two matings only seven young survived and six of these are still living, five of which are runts, though their parents were unusually large, strong animals.

The following combinations were made:

1. Alcoholic males were mated to normal females. This is the paternal test, and is really crucial proof of the influence of alcohol on the germ cells, since the defective offspring in this case must be due to the modified germ cells of the father. Of 24 matings of this type 14 gave no result at all, only 12 living young were born in five litters. Seven of these died soon; only five have survived and these are unusually small and very shy and excitable animals.

It is a point of some interest that all of the young animals that died showed various nervous disturbances, having epileptic-like seizures, and in every case died in a state of convulsion. This is commonly the fate of feeble and nervously defective children.

The important fact in the above case is that only the father was alcoholic, the mother being a normally vigorous animal.

2. Normal males were mated with alcoholic females. This is the maternal test. In such cases the alcohol may affect the young in two ways—by modifying the germs cells of the mother, or by acting directly on the developing embryo. There are only four such matings. Three living litters were born, one consisting of three premature young that died at birth. The other two litters consisted of one young each which have survived.

The alcoholic treatment in one of these cases was not begun till after the mother had been pregnant for about three weeks. In the other case the animal was weak and small for several months but finally recovered and developed into a normal animal. She was mated with an alcoholic. She was killed by accident, but one of her young was found to be deformed and showed decidedly degenerate and feebly developed hind legs. All the affected offspring of alcoholic guinea pigs are weak in their hind extremities and drag their legs. Yet none showed a noticeably structural effect except this which had one alcoholic grandmother and an alcoholic father.

Finally we may consider the results of pairing two alcoholized individuals. The third line of the table summarizes these results. As might have been anticipated, this type of mating has given the highest fatality of all.

Ten out of a total of 14 matings have given no offspring or early abortions. Three still-born litters have been produced, each consisting of two young.

Only one living litter was born from the 14 matings in which both parents were alcoholic and this litter consisted of but one weak individual which died in convulsions on the sixth day after birth. This is indeed a decided effect of alcohol on the offspring when one compares it with nine control matings of normal animals, all of which gave living litters containing a total of 17 individuals all surviving and all large, vigorous animals for their ages.

TABLE

Condition of Animals	Number of Matings.	No Result or Early Abortion	Still-Born Litters	Number of Still-Born Young	Living Litters	Young Dying Soon After Birth	Surviving Young
Alcoholic male by normal female	24	14	5	8	5	7	5
Normal male by alcoholic female	4	1	0	0	3	3	2
Alcoholic male by alcoholic female	14	10	3	6	1	1	0
Summary	42	25	8	14	9	11	7
Normal male by normal female—control	9	0	0	0	9	0	17

—*Scientific Temperance Journal.*

ALCOHOL AND THE MENTALLY DEAD.

By Joseph Wigglesworth, M.D., F.R.C.P., M.R.C.S.

I recently submitted to a careful analysis all the cases of alcoholic insanity admitted into Rainhill Asylum during a period of eleven years —1891 to 1901 inclusive. These were worked out. Each individual case was carefully reviewed, and in doubtful cases, even if drink was said to be the cause, that was not put down. I was anxious to get at the thing exactly, without any exaggeration.

During this period 4,261 persons were admitted, and in no less than 1,249 of these there was clear evidence that the insanity was due wholly or in part to the toxic effects of alcohol. These figures give a percentage of drink cases on the whole number of cases admitted of 29.28. Of course in many of these cases the alcohol merely renders actual defect potentially existent in the organism, but it is not by any means always so, for alcohol is quite capable of inducing insanity in persons who show no hereditary tendency thereto.

In 688 of the above total of drink cases—16.14 per cent—alcohol was the only cause that could be ascertained for the patient's insanity whereas in the remaining 560 cases—13.14 per cent—other factors, such as heredity, assisted to bring about the result. No person has been counted more than once.

These figures give some slight idea of the frightful havoc wrought by alcohol on the nervous system. There is reason to believe also, from the great frequency with which a history of gross parental intemperance is found in the antecedents of persons who become insane, that a habit of excessive drinking tends in some cases to a poisoning of the germ cells of the parent by means of the alcohol circulating in the blood and a consequent tendency on the part of these germ cells to develop into an organism with an unstable or badly developed brain. This may probably result even if the sperm cells of the father alone are affected.

It may be said that the effects on the offspring from a drunken mother are worse, though it is not proved scientifically, because it is difficult to prove a thing of that kind, but those of us who have seen a great many of these cases have all come to that conclusion—that a very large proportion indeed of cases of insanity have intemperate parents. I worked it out that a sixth part of all the cases had a history of alcoholic intemperance in the parents. That was excluding all cases in which there was any hereditary tendency. It was necessary to exclude those.

It is my opinion that the sperm cells of the fathers get so injured by the alcohol that the union of the sperm cell and the germ cell will produce unstable offspring. Of course the mother might be healthy and counteract it and so on—it does not necessarily follow. We know that perfectly healthy children are born of drunken parents, but in many cases it does operate. There is no question with regard to drunken mothers that alcohol exerts an extremely pernicious influence on the young, and poisons the nerve centers when the child is in a very susceptible condition. I think it is very important to look at the development of insanity from the point of view of development from the germ. There is no question that among exciting causes alcohol is one of the most frequent.—*Report of Inter-departmental Committee on Physical Deterioration.*

HUMAN LIFE AS A NATIONAL ASSET.

Address by E. E. Rittenhouse, Conservation Commissioner of the Equitable Life Assurance Society, before The National Conservation Congress, Indianapolis, Indiana, October 2, 1912.

The National Conservation Congress has been engaged in the noble task of guarding posterity against the waste of our natural resources by the present generation. It has had a most far-reaching influence, for its purposes are in tune with public sentiment, and with the spirit of the age. It has now given another and still more commanding reason for its existence by joining earnestly in the campaign for the conservation of our "human assets." This a field of usefulness that will endure for all time. However important the protection of our natural material resources may be, our greatest obligation to posterity is to preserve the health, virility and morality of our race.

The first and the most important item in humanity's Bill of Rights is *the right to live.*

The primary purpose and function of organized society is to guard the lives of its members from needless destruction. Liberty, education, wealth and other earthly blessings are important—but we must be alive to enjoy them.

The nation with the keenest sense of justice and the highest standard of intelligence and morals—virtues which some of us modestly claim for our people—is the one which should place the highest value upon human life and surround it with the greatest protection.

How would our civilization rank by this method of measurement? What have we already accomplished in preventing life waste? What is our present loss? How can it be reduced?

We may well rejoice over the achievements of the patient heroes of the laboratory and of the unselfish and devoted men of medicine who have provided, disseminated and applied the knowledge of prevention so far as it has gone. To them, to the press, the clergy and the other good men and women who have helped spread the gospel of disease prevention belong the chief credit for the reduction of the death rate by nearly 25 per cent in the past 30 years.

To these benefactors of our race is also due the honor of initiating and developing the widespread interest which now prevails throughout our country in the conservation of health and life. They have demonstrated that morbidity and mortality can be reduced—that human life can be prolonged by spreading and applying our present knowledge of the science of disease prevention. At the close of last year we had to the credit of these life savers over 400,000 lives that would have been lost that year if the death rate of 1880 had still prevailed.

Doubtless very few people could have been found in the year 1880 who would have believed it possible to make such a substantial reduction in life waste in three decades.

If the present thirst for knowledge of health and life conservation continues to increase, it is not only possible, it is reasonably certain that during the next thirty years the present death rate of 15 per 1000 population in the registration area will be reduced to 10.

While we have every reason to felicitate ourselves upon this wonderful result of the spread of life-saving intelligence, we must not overlook these facts:

1. That this great life-saving movement is still in its infancy.
2. That it has been directed almost wholly against preventable contagious diseases, and that the waste of life from these maladies has only been reduced—the loss is still excessive.
3. That while we have reduced the mortality from these diseases common to infancy and early adult life, the degenerative diseases of middle life and old age, against which we have waged no war, have been steadily increasing.
4. That we have increased the average length of human life only by increasing the proportion of people living in the younger age periods, while the average duration of life of those who pass into middle life and old age has been constantly shortened.

In other words we are still furiously burning the candle at both ends —slower at one but faster at the other.

What excuse have we Americans to offer for the excessive waste of human efficiency and human life from which the nation is now suffering?

Surely we cannot plead ignorance or poverty, for we have both the knowledge and the money wherewith to stop this annual sacrifice.

How can we explain our growing contempt for the value and sacredness of human life? There is no other civilized country where this greatest of all assets— the most precious gift of the Almighty—is held so cheaply as in this glorious land of ours.

And why do we continue to view with indifference the constantly multiplying evidences of the mental and physical degeneracy of our race?

We may agree that in the long run the trend of humanity is ever upward, and that this is but a temporary reaction, but can we afford to rest wholly upon the hope that race deterioration will automatically cease when our people have had time to adjust themselves to modern conditions? Wise men doubt it. This problem will not solve itself; this adverse tendency will be checked only when our people are made to see conditions as they actually exist, and are aroused to the need of correcting them.

This is our task. Let us briefly survey it.

In order to measure the effectiveness of the nation's life conservation work, and the magnitude of the task remaining undone, we must now compare our efforts not with those of the past, nor with those of other communities or countries, but with our present loss from preventable and postponable sickness and mortality.

What are the principal items of life waste?

What evidence have we of degenerative tendencies? Here are some of them—the estimates are from competent sources and are based upon official records.

An Indictment

With all its blessings modern civilization has introduced hazards, habits and conditions of life which not only invite, but which have increased in many ways, physical, mental and moral degeneracy.

Our birth rate is steadily declining, and at the same time the span of life is steadily shortening.

Twenty-seven per cent of our annual deaths are of babies under age 5; 200,000 of them die from preventable disease; about 150,000 of these are under age 1.

To offset this waste of life, large families are demanded. Would it not be well to stop this needless destruction of infants before asking for an increase in the supply?

Of the 20,000,000 school children in this country not less than 75 per cent need attention for physical defects which are prejudicial to health.

Insanity and idiocy are increasing.

Diseases of vice, the most insidious enemy of this and future generations, are spreading rapidly according to medical men. So far we have lacked the moral courage to openly recognize and fight this scourge.

The alcohol and drug habits are constantly adding new victims to the degenerate list and to the death roll.

Suicides are increasing and now reach the enormous total of about 15,000 annually.

Lynchings and burnings-at-the-stake continue, and are common only to our country.

Attempts upon human life by individuals and mobs under trifling provocation, or none at all, are obviously increasing.

Over 9,000 murders are committed every year, and it is estimated that but an average of 116 murderers are executed for these crimes. We have the appalling estimated homicide record of over 100 per million population as against 7 in Canada, 9 in Great Britain, and 15 in Italy.

In the United States the death rate above age 40 has increased steadily for years (about 27 per cent since 1880), while it has remained virtually stationary in England and Wales.

The important organs of the body are wearing out too soon—the diseases of old age are reaching down into the younger age periods.

The death rate from the degenerative diseases of the heart, blood vessels and kidneys, including apoplexy, has increased over 100 per cent since 1880. These diseases claim over 350,000 lives annually.

The doctors tell us that fully 60 per cent of these deaths are preventable or postponable if the disease is discovered in time.

Periodical health examinations would detect these chronic diseases in time to check or cure them, but aside from the efforts of the Equitable Life Assurance Society and another smaller company, no public campaign to educate our people to this vital need is being carried on.

All of our money, all of our energy, seem to be directed against diseases that can be communicated. Is not a life lost from Bright's disease as valuable as one lost by typhoid fever?

The annual loss from pneumonia aggregates 135,000 lives, a large portion of which is due to weakened bodily resistance resulting from these degenerative affections.

Cancer, a baffling disease of the degenerative class to which our people in their present physical condition are highly susceptible, claims 75,000 lives annually and is increasing very fast. Deaths from external cancer alone have increased 52 per cent in ten years.

Pellagra, a deadly plague new to this country, is increasing rapidly in some of our Southern States, and it excites but slight public concern.

Over 150,000 Americans are destroyed annually by tuberculosis. We know how to prevent it, but our taxpayers object to the expense and leave the battle almost wholly to charity.

Nearly a million afflicted people are spreading the poison of tuberculosis to the well, with virtually no official restraint or supervision because of the expense.

Over 25,000 Americans are still sacrificed annually to the preventable filth disease—typhoid fever. About 300,000 suffer from it and are more or less impaired by it.

Other germ diseases are wasting more lives than typhoid and tuberculosis combined. We are warring against them, but compared to the lives still being lost our efforts are feeble and only partially effective.

Over 90,000 Americans are killed annually by accidents and various forms of violence. Our efforts to prevent the steady increase of this waste have failed.

The annual economic loss due to preventable disease aud death is conservatively estimated at $1,500,000,000, and our fire loss at about $250,000.000.

To prevent fire waste our cities spend through the public service approximately $1.65 per capita, and to prevent life waste 33 cents per capita.

It is estimated that 1,500,000 of our people are constantly suffering from preventable disease, and that during the next ten years American lives equaling the population of the Pacific Coast and Rocky Mountain States (over 6,000,000) will be needlessly destroyed if the present estimated mortality from preventable and postponable disease continues.

These are the conditions we are asking our people to correct. Is there anything unreasonable in the request?

The money loss is stupendous, but if this does not impress our people, surely they should be stirred to action when they reflect upon the immeasurable sum of sorrow, suffering, poverty, immorality, crime and the hereditary degeneracy which results from this wholesale wrecking and destruction of human life from preventable cause.

Race Suicide

We are not only reducing the fertility of our race and also shortening the span of life, but we are permitting at least 650,000 lives to be destroyed annually which we could save by the application of simple and well-known precautions.

This is the real race suicide problem.

If we would save these lives, they together with their natural offspring would solve the problem of maintaining an adequate surplus of births over deaths. What we need is not necessarily larger families, but *more* families. A large number of small families is surely preferable to a smaller number of large families.

And this suggests another important and familiar topic of discussion.

The number of unmarried people in this country is excessive and their proportion to the marriageable population is apparently increasing.

A great army of young women are forced by the struggle for existence to toil in our factories and business houses, while another great army of unmarried young men are spending their earnings upon themselves and many of them are developing extravagant and often vicious habits which they hesitate to exchange for an orderly, economical married life.

This is an unnatural state of affairs. It cannot be corrected by law, but it does seem that a fit man who is unwilling to take up the natural and most important duty which he owes society should be penalized in some rational way.

The Dollar and the Death Rate

The primary duty of conserving our human assets resting with the state, it is obvious that the state must lead in the national movement. It is, therefore, the first duty of every individual and of every unofficial organization interested in this efficiency and life-saving campaign to rally to the support of the public health service.

We must not only teach the individual how to guard his life against preventable disease and accident, we must educate our communities to the need of an effective public health service to enforce sanitary regulations and otherwise guard the health and lives of their members.

But it takes money to carry on a great educational movement, and it takes money to conduct the public health service.

The war against preventable disease and death is therefore, in the final analysis, a struggle between the dollar and the death rate.

So far the dollar is ahead. The body politic seems still to prefer a high death rate to a slight and temporary increase in the tax rate.

"How much," says the American taxpayer, "will it cost to reduce this annoying death rate to the lowest possible limit?"

"About $1.50 per capita at first, much less later on," answers the health officer, "and you will gain immeasurably by the increase in the wealth and happiness of the community."

"Very well," says the taxpayer, "here is 25 cents; we will save two bits' worth of these lives. The rest will have to die. We have much more important places for our money, we must improve the streets and roads, beautify our cities with much needed parks and public structures. We must improve our harbors and rivers, build canals, and encourage commerce generally. Besides we are absolutely obliged to use about two and a half billion dollars this year for automobiles, jewelry, candy, alcoholic drinks, tobacco, diamonds and other urgent needs of life. What is the loss of a few hundred thousand lives compared with these vital necessities?"

And so the health officer plods along with his two-bit appropriation and naturally runs a two-bit health service. His own fitness and efficiency may be 100 per cent but the effectiveness of his department only 15 per cent because of the 25-cent limit.

Trifling with a Solemn Duty

National Government.—Of all the money provided by the people for the expenses of the National Government only about 1.3 per cent is used for the conservation of health and life.

Our national health corps has an international reputation for efficiency and achievement. Although the service is undermanned and its personnel underpaid, the patriotism and high sense of duty of these able and energetic men have spurred them to the performance of the very highest service to their country and to humanity. They have not only jeopardized their lives, but numbers of them have sacrificed health and life in the performance of duty.

Through their discoveries in the science of prevention, they have been the means of saving thousands of lives, not only for one year but for all years to come. They have won the admiration of the American people and deserve their most hearty support.

And yet, when it is proposed to coördinate the various public health activities of the Government in order to increase the efficiency and usefulness of this splendid body of men, the interest of our countrymen in this service seems to end with admiration. For notwithstanding our confidence and appreciation we have permitted a small but active body of people who are more concerned in treating disease than in preventing it to block the consummation of this thoroughly sensible and business-like consolidation of the various bureaus under one responsible head.

We have many educational agencies at work throughout the country which are directly or indirectly arousing public interest in health conservation, but this experience emphasizes the need for a permanent central organization to stimulate interested people to back up their judgment with action, and no organization is better fitted to render this invaluable service than this National Conservation Congress.

At the last session of this Congress Dr. Harvey Wiley told you something about the dangers of impure food, drink and drugs, and what was being done to guard the public against them. Your individual interest was excited. How long did it continue? Were any of you inspired to give actual support and assistance in the enforcement of the pure food laws or to any other official public health activity? To be interested and to agree is not enough—again, we must act, individually as well as collectively, and stimulate others to act.

States.—The same lack of practical support of the public life-saving service exists in most of the States. The appropriations for the public health work of our State departments can only be characterized as trifling. The exception is Pennsylvania, which is paving the way for a fully adequate health service, as was explained to you at the third session of this Congress in the able paper of Mr. A. B. Farquhar.

The appropriation for the Pennsylvania State Health Department is about 48 cents per capita. Arkansas makes none at all, the State of New York spends about 1.7 cents; Massachusetts, 4.2; Florida, 10; Indiana, 1.8; Kansas, 2.7; Virginia, 1.9, and so on.

Municipalities.—We have many cities with active and efficient health officers, but there is not a city in this country with an adequately equipped and financed health department. Not one of them has sufficient financial support to successfully perform its task, which must be measured by the preventable sick and death list in each community. And we must not confine this list to contagious affections. It must include an educational campaign against all preventable diseases.

The duty of the State to teach our people, through the health departments, how to avoid preventable disease of all kinds that they may live healthful and productive lives, is just as imperative as is the duty of teaching them, through our schools, how to avoid illiteracy and how to live intelligent and useful lives.

While health appropriations have increased over former years, all of our cities place the value of property far above that of human life in applying measures to prevent waste.

In 1911 50 of our important American cities, with an annual preventable death list of 117,724 people (which means an economic loss of at least $200,000,000) spent through their public service to prevent life waste, an average of 30 cents per capita, and through their fire departments to prevent fire waste, $1.63 per capita.

Here are a few examples: Providence, R. I., spent for health conservation 11 cents, for fire prevention $1.99 per capita; Portland, Ore., health 13 cents, fire $1.91; Minneapolis, health 14 cents, fire $1.67; Louisville, health 12 cents, fire $1.36.

In 1910 184 American cities could spare but 2 per cent of their total public appropriations for the public health service—the average per capita expenditure was 33 cents. Seventy-one of these 184 cities spent less than 15 cents per capita for the public health, and among these are such cities as Quincy, Ill., 2 cents; Lansing, Mich., 5 cents; Rockford, Ill., 6 cents; Scranton, Pa., 7 cents; Bridgeport, Conn., 9 cents; Portland, Ore., 10 cents; Harrisburg, Pa., 12 cents; Jersey City, N. J., 13 cents; Springfield, Ill., 14 cents.

There are many of our largest cities that are well below the average of 33 cents per capita. Among them: Toledo, 15 cents; St. Paul, 17 cents; Minneapolis, 18 cents; Indianapolis, 20 cents; Kansas City, Mo., 20 cents; Milwaukee, 20 cents; Cincinnati, 21 cents; Chicago, 22 cents; St. Louis, Mo., 26 cents; Buffalo, 27 cents; San Francisco 28 cents.

The natural result of this sort of economy is that the health laws we have are not properly enforced.

How can we benefit from the pure food laws, for example, while we refuse to provide the means of enforcing them?

The great City of New York has an ably administered health department, but it has only 30 inspectors to supervise over 27,000 food dispensing establishments. The request of the health officer for an inspection force of 209 men has been steadily ignored for years.

How do you suppose the meat ordinances of Philadelphia are enforced where the people allow the health department but seven inspectors to watch over 8,000 meat shops and slaughter houses?

How can the eight pure food inspectors in Kansas be expected to enforce the pure food laws in the drug and grocery stores, the meat shops, bakeries, etc., in 800 towns? These inspections must be made frequently to be of any value.

These are not exceptions, they are examples.

Could anything be more absurd from a business point of view than this record of "economy" in providing for the public life-saving service?

How Some Communities Save Money

Some prosperous American communities hold human life so cheaply that they maintain no public health service at all. Others—and there are many of them—have a mere skeleton service. The citizens imagine that if they appoint a health board consisting of doctors, all will be well with them. The suggestion that the board be provided with money to carry on its functions would be regarded as wanton extravagance.

There are scores of cities and towns which select a doctor to head the health department and expect him to earn his living by practicing his profession among the very people over whom he is supposed to exercise police authority in enforcing sanitary and other health regulations.

There are cities of from 50,000 to 100,000 population that hire a doctor on the "part time" plan as chief health officer, and pay him a trifling salary. Whether he is a competent sanitarian or in any way skilled in the prevention of disease is a matter of little concern to them. The fact that they are saving a few dollars in his salary fills them with joy and indifference as to the consequences to the community.

I know of a thriving, wealthy young city in the South of 130,000 population with a substantial preventable death rate which saves as much as $800 annually in this way.

I know of a prosperous New England city of 40,000 population with but three people in its health department,—two of them are "part time" employees. It is a six cents per capita department *and 50 per cent of the annual deaths in that city are of children under five years of age.*

In theory we must all stand ready to serve the State when called upon, even at personal loss. But does it not seem the height of absurdity to expect a competent professional man to leave his practice to take charge of these undermanned and underfinanced health departments at the small salaries which our States and cities offer them? If he does his duty he is sure to make enemies during his term of service, and if he is an able man he will certainly lose money by leaving his practice.

Surely we offer our health officers every inducement to follow the line of least resistance.

A Sample Group of Cities

An investigation was recently made of 44 Illinois cities averaging in population about 16,000: Fifteen of them had over 20,000 population and three had over 50,000.

The average salaries paid the chief health officer amounted to the magnificent sum of $300 annually.

Twelve of these cities paid nothing for health protection—and this included three cities of 22,000 population and one of 30,000 population.

One city of 26,000 population employed a layman as a health officer.

In one of 22,000 the police matron served as "health officer" when she was not otherwise engaged.

Twenty-nine of these cities made no pretense of supervising their milk supply.

Only nine of them had isolation hospitals for contagious diseases.

Thirty-one of them kept no mortuary records whatever.

These conditions exist in a prosperous agricultural and manufacturing State—and they can doubtless be found to exist in almost any State in the Union.

Agencies That Can Help

These are unpleasant facts but they give us an idea of the way we are performing the primary function of government—the guarding of human life against avoidable destruction.

We have now considered the extent of the waste of the most vital asset of the nation, and how we are conserving it.

Now let us rejoice over the fact that we not only know how to reduce this waste, but that, thanks to those who have aroused the life conservation sentiment in this country, a general improvement in the public health service is taking place in many States and cities. The experiment has been successful. We now know what we can do. We have the wealth and knowledge, and the machinery is organized throughout the country to rapidly correct our appalling record of life waste. Our work is to induce our people to use it.

Every business and social organization should do its full share of this work.

The life insurance institutions of this country have a constituency of 25,000,000 policyholders. These policyholders are directly interested in the promotion of longevity, not only from the humanitarian but from the financial viewpoint; for the lower the mortality among policyholders the greater will be the saving and the larger the dividends to policyholders, which means a reduction in the cost of their life insurance. It is estimated that about $50,000,000 is lost annually by postponable mortality among the insured.

The Equitable Life Assurance Society, with which I have the honor to be connected, is endeavoring to do its part not only in conserving the lives of its policyholders, but in stimulating community action. The Metropolitan Life Insurance Company of New York is also rendering a valuable public service in conservation along somewhat different lines. Two or three of the small companies, and perhaps the same number of fraternal insurance societies, have also given it attention. Let us hope that the time is near at hand when the other two hundred-odd life insurance companies, and the fraternal societies as well, will also increase their usefulness to their policyholders and the public by joining in this great work.

Some Suggestions

This Congress will be asked to do and to advocate many things, for there are a multitude of independent activities connected directly or indirectly with this general subject. Among others I sincerely trust the following suggestions will be duly considered:

1. To encourage business institutions, civic, social and religious organizations which have influence over any considerable number of people to join in at least some of the many phases of the life conservation campaign.
2. To encourage the education of the individual to adopt healthful habits of life—to avoid the intemperate life, which means excess in eating, drinking, working, playing—and unhealthful indulgence in indolence as well.
3. To encourage communities to establish and maintain ample public health organizations consistent with the magnitude of the work in hand.

4. To advocate the organization of local health leagues as a stimulus to public interest and to give aid and support to the public health service.

5. To encourage the slowly growing sentiment for a rigid supervision (and isolation if necessary) of tubercular victims, which is the only way in which this devastating plague can be stamped out.

6. To advocate the employment of civic nurses in the health service; who may also act as health inspectors and aid in educational work.

7. To advocate the issuance and distribution by the States or municipalities of an official prevention manual to teach the public how to avovid prevetable disease.

8. To urge every individual to go to his or her doctor for periodical health inspections to detect disease in time to arrest or cure it.

9. To urge employers of labor to give their employees these examinations free as a part of their efficiency and welfare program.

10. To encourage philanthropy, now so generously contributing for the care of the sick, to also enter the field of disease prevention which it has so far quite generally neglected.

Human life is our paramount asset. Its conservation should be your paramount issue.

Wave and Tide.

On the far reef the breakers
Recoil in shattered foam,
While still the sea behind them
Urges its forces home;
Its song of triumph surges
O'er all the thunderous din,
The wave may break in failure,
But the tide is sure to win.

The reef is strong and cruel
Upon its jagged wall
One wave, a score, a hundred
Broken and beaten fall;
Yet in defeat they conquer,
The sea comes flooding in,
Wave upon wave is routed,
But the tide is sure to win.

O Mighty Sea! thy message
In clanging spray is cast,
Within God's plan of progress
It matters not at last
How wide the shores of evil,
How strong the reefs of sin,
The waves may be defeated,
But the tide is sure to win. —*Outlook.*

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DR. PRATT'S ARTICLE IN THIS BULLETIN

Is deserving of the careful attention of our readers—lay and professional alike. The article is free from technicalities, being intended primarily for public, not professional, consumption; however, Dr. Pratt speaks with authority in the highest scientific courts, and we venture to state that few medical men will regret the time given to reading the article. We especially invite the attention of the thirty thousand tuberculous citizens of our State to Dr. Pratt's valuable advice regarding rest in tuberculosis. Those who read this article may confer a life-saving favor on some tuberculous friend by having the State Board of Health to send him a marked copy of this issue of the Bulletin. To do this the cost of a post card is all that is necessary; you know our address.

SANITATION OF STORES

A prominent merchant in one of our most progressive towns writes: "If proper precaution is used there is little risk of having consumption. We tried to inaugurate a health movement here by placing all through our store signs reading thus:

DON'T SPIT
ON THE FLOOR.
BREEDS GERMS.

'Tis a rare occurrence when any one spits on our floor, and other merchants tell us that our signs are having effect on their places of business, too, as people now hunt the stove or some other place to expectorate. And 'twas gratifying to us to hear from Columbia, S. C., that a traveling salesman made the remark that ours was the best kept place he had seen. Cleanliness is the watchword here."

"NATURE'S INSURGENT SON"

Humanity versus the Survival of the Fittest

A preacher, in illustrating the effect of obstacles, troubles, and suffering on the development of character, quoted a remark of one of his lady parishioners to the effect that she was tired of all the present day talk about germs and how to avoid them, for, she added, "If such advice was followed, it would make hot-house plants of us all."

Unfortunately her ladyship's position is not a lonely one; there are many others who reason from the same fundamentally false premise; some of these are people of great attainments in special fields of knowledge with influence extending far beyond the mental jurisdiction of their specialties. The lady's remark must be taken as representative of a type of mind whose influence is not inconsiderable.

The question is frequently and seriously raised as to whether all the efforts of modern civilization to strengthen the weak and uplift the fallen—human conservation—are not in conflict with that great natural law, the survival of the fittest; and, when this question is answered in the affirmative, as it surely must be, the inference is that God having made the law of the survival of the fittest, the law must be right, and, conversely, those who oppose the law must be wrong. For, it is a fact that, disease germs pick off the weak, those poor in the power of self-control, that is, the ability to respond to conscience, those who yield to temptation, to intemperance and to vice in all of its forms. And, is it not also true that, if the weak, themselves, haply escape destruction and reach the period of procreation, even yet the germs assure the safety of the race by visiting diseases upon those foreborn to physical damnation even unto the third and fourth generations? In short, are not the germs the pruning hook of Father Time and Mother Nature, with which the tree of life is shorn of all the suckers that would consume, to no purpose, the nourishment that would otherwise go to the making of great and strong branches that would bear abundant fruit?

These questions infringe upon the fundamental principles laid down by Him who said that He was come to save the lost, and, at another time and place, that the meek (not necessarily the physically strong) shall inherit the earth. Such questions arise out of the failure on the part of those who propound them to understand not so much the *interpretation* of the law of the survival of the fittest as to understand its *application* to the human species.

Now, if man existed like all species of plants and animals once did exist, and some continue to exist *under* the natural laws, (the key word is underscored), we would certainly have to agree with those who hold that it is both foolish and wrong to endeavor to save the weak and the fallen. But, here is the great question that those must answer who criticize modern civilization for opposing boldly, deliberately, confidently the law of the survival of the fittest. Is man to live under the law of nature, or is he in charge of nature? Who's in charge, Mother Nature, or her son, Man? Listen! "And God said, let us make man in our image, after our likeness; and *let them have dominion* over the fish of the sea, and over the fowl of the air, and over the cattle and over all the earth, and over every creeping thing that creepeth upon the earth." Genesis 1:26. "The mental qualities which have developed in man, though traceable in a vague and rudimentary condition in some of his animal associates, are of such unprecedented power and so far dominate everything else in his activities as a living organism, *that they have to a very large extent, if not entirely, cut him off from the general operation of that process of Natural Selection and survival of the fittest which up to their appearance had been the law of the living world.* They justify the view that man forms a departure in the gradual unfolding of Nature's *predestined* scheme." *E. Ray Lancaster,* foremost of modern English biologists. (Italics of quotations ours.)

There you have the big question answered by both of the great authorities, by Moses and Darwin. Man, representing in form and likeness the Supreme Ruler, represents Him, too, in function, exercising supervisory power, in dressing and keeping the garden in which he sows and reaps his destiny. And so, being in charge of all living things, he alone is responsible, the only animal with the sense of responsibility.

Man's assumption of power has been gradual, of an evolutionary character, and in order to appreciate clearly his present kingship in the realm of nature, it may be well to examine first the time in nature before the development of his power.

IN THE BEGINNING.

There was a time in nature when natural law operated uninfluenced by man. This fact is in accordance with both history and science.

Now, at that prehuman period of the world's history there were two apparently conflicting conditions, the outcome of which was the strict enforcement of that natural law, known as the survival of the fittest, to which law the scientists say man himself owes his existence. Parenthetically, we may remark here, that scientists as a class recognize that God made this law, and is therefore, as much the Creator of man as if he had called him full-blown into existence in the twinkling of an eye at the word of his power.

One of the two conditions responsible for the law of the survival of the fittest was that at that period of the world's existence the earth was covered with all the life that it could sustain. The totality of life for countless ages has remained constant. The birth of each new form is at the expense of the life of the old. Man can not add one jot or tittle to the total quantity of life; he can only change the form of life as he does when he destroys the woods and weeds and plants corn or cotton.

Now, with the fact that life cannot be increased, let us note another primal and fundamental characteristic of life—reproduction. With all living space occupied and with living forms reproducing constantly, there can be but one result, those less fitted to live under such conditions must make room for those better fitted; death must go hand in hand with life. The struggle for existence brought about by these two conditions, crowded living room and reproduction, is fiercest between those living things whose interests are most identical, that is to say, as the individuals of the same species have desires and needs more identical than are the desires and needs of different species, the struggle for existence is not intense within the species, between parents and children, brothers and sisters and cousins. The struggle for existence between different species is a minor phenomenon. The final outcome of the strife within and between the species means that the fittest individuals of the species and the fittest of the species will survive, and that these fittest will reproduce a yet fitter. It requires no strain of the imagination to understand how this process has led to present conditions, and it requires no power of prophecy to see that the ultimate outcome of this process, which is as much in force today as it ever was, will conform with Revelation wherein it is declared that the future life will be such that no eye hath seen nor ear hath heard of.

The final outcome of this process of the selection of the fittest, the convergence of the forces of heredity, was an animal which we call man, so well fitted to survive and so powerful, as compared with other living things, that he has learned much of his Mother Nature, and how to direct her ways.

THE KINGDOM OF MAN.

In early prehistoric times man began his course by forming associations with other animals where such associations proved of mutual advantage. He probably entered first into partnership with the wild dogs; he stole some puppies from the mother dog and tamed them, and they helped him catch his meat; he tamed some of the wild calves, and learned where to get his milk. For centuries he was a hunter, and, as time went by, he learned the value of certain plants; he found their fruit good for food, their leaves, bark and fiber good for clothing and protection. The fittest men of the species were those whose observation was most acute; those whose memory for storing away the experiences of ancestors was best developed, and these powers, developing in accordance to the law of the survival of the fittest, became more and more marked in the descendants of men.

As the race grew older and wiser they learned how to improve their dogs, stock, and plants. Man probably learned first the effect of environment on his stock and plants: that to get a good cow he must feed the calf well; that a tree bore more abundantly in an open clearing than in the shade; that certain plants grew better in moist than in dry soil, etc., and, after this, he began to learn the possibilities of selected breeding; he learned how he could protect those plants and animals that he had taken over to his care from certain harmful conditions that, without his intervention, they were susceptible to.

But, here let us note some of the effects of man's meddling; let us take his horse and see what effect the emancipation from natural law under man's direction has resulted in. The primitive wild horse is the zebra of Africa. An examination of the blood of zebras shows that every zebra has in his blood the germs of sleeping sickness. The association of the zebra and germ as host and parasite has been of such long duration that the two have become perfectly adjusted to each other, a condition that biologists call *symbiosis.* The young zebra's blood is free from the germs of sleeping sickness, but the zebra colt is only a few days old when a tsetse fly, that has bitten the mother or some other old zebra, bites the colt, and in so doing inoculates the colt's blood with the sleeping sickness germ; but, the colt has inherited immunity through the long immunity acquired by the species and suffers no harm. Now, take a horse from the United States to Africa, an original descendant of the zebra, but a descendant that for thousands of years has been away from the habitat of the tsetse fly, and, therefore, has had no sleeping sickness germs in its ancestral blood; a tsetse fly bites the horse and in a few days he is dead from sleeping sickness or *trypanozomiasis.* This same difference between original stock and highly selected stock, stock grown under conditions unnatural to conditions that moulded their ancestors, is seen in the difference in susceptibility to disease, blight, etc., shown by seedlings and nursery plants, and more especially in the response of varieties of plants that for a long time have remained healthy, but that suddenly are brought under the influence of some imported disease previously unknown in this country.

Now, what man has done for plants and animals in emancipating them from their natural conditions, he has done to a large extent for himself; he has learned where the causes of disease exist, how such causes travel, and how he may avoid them. In other words, man has been for long years staving off disease, interfering with the adjustment by death that operates under perfectly natural conditions, and, therefore, has reared great populations of human beings that have grown up unadjusted to the conditions that surrounded primitive man. He long, long ago came to the forks of the road and chose his course; he can no more go back and retrace his steps than a man can enter the second time into his mother's womb. Think, for a second, what it would mean to withdraw all our guard against the entrance and ravages of disease among our people; what it would mean to take down our national quarantine service and allow bubonic plague, yellow fever, and cholera to come within the ports of this country; take away our State, county and municipal quarantine and turn these diseases loose amongst us. When we want to go back to savagery, to primitive conditions, that will be all that is necessary, and we will drop in a few years from a height to which it has taken milleniums to climb. Moreover, the movement against the eradication of many diseases has been gaining tremendous momentum within recent years, and we may safely say that some of the diseases that make the largest contributions to our mortality tables today will cease to exist within the next twenty-five or fifty years. We have gone too far to turn backward, and the assurances of great victory are too positive to even suggest such a course.

This principle of "everybody for himself and the devil take the hindmost" or complacent obedience to the law of the survival of the fittest as applied to human beings, reaches far beyond the efforts of modern society to save the physically weak. If adopted as a principle, we must do away with all forms of charity, because those suffering from poverty are, under the law of the survival of the fittest, the unfit, and should be allowed to suffer and die; those who cannot secure an education are, as compared with those who can, the mentally unfit and should die; the principle does away with reformatories and juvenile courts; in fact, this principle shatters the very foundation of sociology, the basic principle of which is "bear ye one another's burdens."

THOU SHALT NOT KILL.

It must be admitted that this policy will mean that the weaker children, which preventable disease would, under perfectly natural conditions, deny the right of reproduction and the continuance of their kind, shall live. But, if civilization permits these children to be born, civilization has no right to murder them. It is, in effect, just as much murder to permit the death of a person, by refusing to prevent it when it could be prevented easily by some act of omission as it is to cause the death of a person by some act of commission. "Thou shalt not kill" has no *proviso* restricting the application of this primal and fundamental civic law to acts of commission only. The pertinent question may be raised as to whether or not certain weak human animals should be allowed to reproduce their kind, and it is absolutely certain that society some day will answer this question, and answer in the negative. But, if society permits the birth of children that are innocent of any harmful effect on society, children for whose birth not they themselves, but society is responsible, the crudest justice will not warrant their murder through preventable disease turned loose.

Another way to look at this: what children shall we permit to be slain? Who can, with all the biographies of the great men, men of tremendous power and influence, select such future men from the babies of today? Or, who would take so small a view of the potentialities of a child to predicate its future solely on its physical appearance, and neglect to take into account the moral and spiritual organization of the child? Or come closer yet to our problem: What person can look back over the funerals of little children, dead of some preventable disease, that they have attended, and say it was right that this child should have died, the world is better off without it? Or, to meet the problem again face to face and in concrete form, how will the reader, for himself, answer the following letter, which appeared in the *New York World* of December the sixth?

"DOWN AND OUT"—A DISCOURAGED WIFE

To the Editor of The World:

In Sunday's *World* I read of the man who signed himself "Down and Out." He is thankful because he is alive. Is that all to live for?

My husband has been doing just what this man is doing—addressing at a mailing house. Since last July he has made sometimes a dollar a day, sometimes more, but often much less, as addressing at this house is eighty-five cents per thousand. Thanksgiving day he took off because of the holiday. Friday he went to work but could not make a day, and Saturday came home at five sick, went to bed and stayed in bed until Monday morning.

This week he has made $5; the most is $6. He has two to care for besides himself and myself.

We have no underclothing; a baby of nine months has no clothing; even when it is fit to take baby out he has not warm clothes to put on. I have tried to get some one to board baby and allow me to get work, but we can not save anything for that purpose.

If some good person would only give my husband work where he could make good and make a living! At this time it is cold and damp, with wet clothes hanging around and not fit for a young child. I have only a wee small gas stove on which it is impossible to get a meal. We have a room for which we pay $3 per week, and with his small wages, believe me, when the rent is paid, baby's milk and carfare, there is nothing left but to starve and to shiver for want of proper clothes and food.

I have tried to get housekeeping where I could take my child, but no one wants a child or wants to pay enough wages to board a child. If something is not done in behalf of both work and wages or a home offered for baby where he will not want, it will certainly be the river or some other way out of it. THOROUGHLY DISCOURAGED.

Brooklyn, December 4.

DEATH AND THE LORD

By Hermann Hagedorn.

Death touched the Winter's arm, and spoke:—
"Faith, you are pleasing in my sight.
A thousand of this beggar-folk
Knocked at my Iron Gate last night."—

"I starved the fools that paid for fire,
I froze the fools that paid for meat.
I have my human helpers, Sire."—
Nodding, quoth Death, "The trick was neat."

"The old," quoth Death, "the white of hair,
That lived their span and seek the grave—
What prize are those, But these were fair,
And all were young, and most were brave.

"I saw them stiffen in the gloom,
Waiting, wide-eyed, the tardy dawn.
The huddled dozen in the room—
How should they know that one was gone?

"They lay all silent, black and grim—
But once a woman's wail I heard,
Praying a cursing prayer to Him,
That Savior whom I once half feared.

"Poor Jesus Christ! A gift to me
Upon a hill they nailed Him high.
Yet I have seen since, mistily,
His Face, and wondered, *Did He die?*

"That was the only Face that e'er
Woke aught in me but scorn of men.
Fools, fools, mankind! Who will not bear
That Face against my hosts again!

"By all the stinging tears that flow
Because of me, by all the grace
That might have been on earth, I know
I could be bondsman to that Face."

Death plucked the Winter's sleeve, and spoke:—
"Christ is not here. Your work is light.
A thousand of this beggar-folk
Send whirling to my gate tonight."

HONOR TO WHOM HONOR IS DUE

It too often happens in our work-a-day life that men, who have been pioneers in a good cause do not receive the praise to which their far-seeing vision and achievements entitle them until they have passed out of this life. The doctors of Wake County do not defer to put on record their appreciation while their distinguished associate is still alive and an active leader in a good cause of which he was the pioneer, and so at a recent meeting of the Wake County Medical Society passed a resolution containing a singularly appropriate and discriminating appreciation of the services Dr. Richard H. Lewis has rendered in behalf of public health and high standard of the medical profession in North Carolina as secretary of the State Board of Health from the time it was organized in 1877 until he resigned in 1909. With meagre support and lack of knowledge by most people of the laws of health and sanitation, Dr. Lewis was, indeed, as the resolution says, "a benefactor to his day and generation." The late Governor Aycock declared that Dr. Lewis was "distinguished for prudence in dealing with the legislative committees, persuasive of speech, always in thorough control of himself, always dependable, careful in framing laws and explaining them, and withal a great patriot and wise counselor." These qualities have not only given Dr. Lewis his position in his native State, but his worth as a man and leader in his profession has been recognized in the Republic as well as in the State, for he has not only been president of the North Carolina State Medical Society but he has been president of the National Conference of State and Provincial (U. S. and Canada) Boards of Health and president of the American Public Health Association (United States, Canada, Mexico and Cuba.)—Editorial, *News and Observer,* January 28, 1913.

WAKE DOCTORS GIVE HONOR TO DR. R. H. LEWIS

Resolutions Adopted Containing a Just Appreciation of the Service He Has Rendered to the Cause of Public Health

At a recent meeting of the Wake County Medical Society that organization, composed of the first men in the county, put on record an appreciation of the signal service rendered by Dr. Richard H. Lewis, of Raleigh, in the securing of health legislation and the enforcement of laws that have brought North Carolina's State Board of Health into the position of leadership among such boards in the South. The resolutions are as follows, and will be endorsed by the laymen as well as the legal profession not only in Wake County but in all North Carolina:

WHEREAS, The Wake County Medical Society, in regular session, wishes to put on record its appreciation of the services of Dr. R. H. Lewis in behalf of public health and high standards for the medical profession in North Carolina. Therefore, be it

Resolved, That the following statement be put upon our minutes and published in our city papers:

Feeling that we should honor while they are alive the men who best serve society and their fellows, the members of the Wake County Medical Society hereby wish to extend their thanks to Dr. R. H. Lewis for the great services he has rendered during the last twenty-five years in improving medical laws of the State and putting North Carolina well to the front of all the States of the Union in the results obtained through the State Board of Health, of which he was Secretary until June, 1909, when Dr. W. S. Rankin, whom he selected, was placed in charge, and the State Board of Medical Examiners, of which he was a member from 1880 to 1884.

The State Board of Health was created by the Legislature of 1877, with an appropriation of $100, and this was increased to $200 in 1881, to $2,000 in 1893, $4,000 in 1899, $10,500 in 1909, and $22,500 in 1911. With meagre support Dr. Lewis rendered splendid service and finally brought the people to see what a state board of health could accomplish if adequately cared for.

The State Laboratory of Hygiene has been an object of Dr. Lewis's special nurture, and, especially since it has been under the management of Dr. C. A. Shore, has become one of the most useful branches of public service.

The medical laws and rules prescribed for the State Board of Medical Examiners have been of an advanced character and have had great influence in raising the standard of graduation in all the medical colleges receiving students from this State.

To have been the main factor in bringing these things to pass is sufficient to put Dr. Lewis in history as a benefactor to his day and generation. It is high testimony to the character of the man that he was able to accomplish these things, while at the same time raising himself in the esteem of all law-makers and public officials with whom he came in contact. A fine illustration of this fact is found in the tribute paid Dr. Lewis by the late Governor Aycock, who was four years chief executive of the State while Dr. Lewis was secretary of the Board of Health. Governor Aycock declared that Dr. Lewis was distinguished for prudence in dealing with legislative committees, persuasive in speech, always in thorough control of himself, always dependable, careful in framing his laws and explaining them; and withal a great patriot and a wise counselor.

Dr. Lewis accomplished this and more as an incidental feature to his very large practice as an oculist. His ability and his true worth as a man have been recognized in the State and Nation. He was president of the State Medical Society in 1891; president of the National Conference of State Provincial (U. S. and Canada) Boards of Health in 1906, and president of the American Public Association (U. S., Canada, Mexico and Cuba) in 1908.

These are some of the qualities which have enabled Dr. Lewis to obtain for North Carolina the best medical laws of any state in the Union; and the physicians of this county and this State honor themselves in paying tribute to his worth.

DR. COOPER'S REPORT

To the Board of Health of Sampson County:

Mr. Chairman and gentlemen: In submitting my report, giving an account of my twenty months service as your Superintendent of Health, I am passing over the formality of quoting figures as to how many houses quarantined, fumigated, etc., and how much money I have received, as all that is on record in the Register's office and is public property. I will say, however, that the total cost to the county for all public health work has been somewhat under five hundred dollars for the twenty months.

You asked me, when informing me of my election on the second Monday in May, 1911, to make any recommendation to your Board I saw fit, and I did make some at a called meeting of the Board in July, 1911, which was later quoted in the State Health Bulletin and also received favorable comment throughout the State. But the recommendations made at that time were of course concerning only matters of most pressing importance. Therefore, I wish to present some matters for your consideration, not in the form of formal recommendations but as matters of vital concern and which I most respectfully urge you to consider seriously.

It is, of course, not necessary for me to say, that though an important item in health work, I have no idea or desire to attempt to dictate to you as to whom you may elect Superintendent of Health today, as I am sure each of you have the interests of our county uppermost in your minds, and while thanking you sincerely for your election last year, allow me to say that if you think best to elect some one else today, that you can still count on my support to help in any way for better living conditions for all our people.

After several years of experience I feel that I have only begun to learn the A B C of public health work, there is so much to be done in an educational work, so much criticism to brook and so many hard battles ahead that I sometimes feel discouraged.

But when I have felt the most like quitting in despair, there has been always some encouraging change which gives new hope. For instance, during the past 20 months I have had four negro families come to me and pay for fumigating their houses on account of death from consumption in their families. Just a casual occurrence to be sure, but showing signs of a deep and permanent awakening. And owing to the fact that we all joined in a Civic League effort here in Clinton last summer, our town was cleaned up as it had never been before with the result that we have not had a single death from typhoid fever since It was my pleasure to assist to some extent in the "Hookworm Dispensaries" carried on under Dr. Jno. A. Ferrell during the summer of 1911, which resulted in much good and in some discucssion of preventive measures and better sanitation.

In asking you to adopt the measures following, I am only giving voice in an humble way here at home to a world-wide awakening, sooner or later they must come; why not now?

"For now the hour of dreams is past;
The gibbering ghosts depart;
And man is unashamed at last,
To have a human heart."

It is the duty of our schools, our churches, our professions and above all our health officials to try with all our might to give every child born and every boy and girl reaching the age of maturity as near an even chance as possible in regard to health, morals and education.

Clarence Poe says that "The most important resource of a State is its Child Life." Would that every man, woman and child in Sampson County could have been reading the *Progressive Farmer* editorials for the past ten years, for if any public man in the whole South has seen the vision and counted the cost of attainment that man is Clarence Poe.

If we adopt these measures we must make up our minds to be called extravagant, impractical, idealists.

It will cost some money, but if properly carried into effect and made permanent the next generation will profit in money value alone a thousand per cent.

If we give ear to the so-called practical politician and business man, then we had better continue in the old way, if we are willing to look to the next generation, to our children, for our reward, then let's adopt the ideal. To quote from a recent speech of Assistant District Attorney Moss, of New York City:

"The wealth of the city is not in its buildings, not in its banks, but in the boys and girls, and the ideals in their lives. Their ideals are the things that we neglect most." To my mind the ideal when put into practice becomes the practical.

But to come to the point. After several years study and thought on the subject, I have planned the following methods, which if you can adopt, will, I believe, place our county right in the front rank as one of the most progressive counties in the whole South. We have the resources. All we need is to develop them and to do this we must make a beginning some time.

1. Employ a County Superintendent of Health for his whole time. That is one of the "Twenty Tests of Progress," published by the *Progressive Farmer* of October 12, 1912. His duties to embrace thorough medical inspection of schools and school children, investigation of all outbreaks of typhoid, malaria, or other contagious or preventable diseases, to deliver lectures to the school children, on hygiene and sanitation; and through the summer months especially to conduct at least three free hookworm dispensaries in every township in the county; to look after the indigent sick; and to work in conjunction with the Superintendent of Schools and (we hope) a commissioner of agriculture. All for the bettering of our public health, schools and general welfare.

Gentlemen, when you stop to think that, according to the U. S. Census report for the decade ending with 1910, that the economic loss by typhoid fever alone for Sampson County annually for ten years was twenty thousand dollars a year with an annual death rate of about fifteen persons. When you realize that there are at least two thousand cases of hookworm disease in Sampson County today, most of whom are children who will soon grow up, stunted and dwarfed in mind and body, too late for treatment, handicapped at the start in the fierce struggle for existence.

When you take these facts into consideration, gentlemen, you surely realize that there is work for a man to do.

It has been my misfortune to witness two deaths the past year, one caused directly and the other indirectly by hookworm infection. One of these lives especially would have been worth more to Clinton and to Sampson County than all of Morgan's money. I say there are two thousand cases of infection in the county today, that is a very low estimate. I have no doubt there are more and so many of them children of the poor, or what is worse, children of the ignorant. There is no hope for them but to live their stunted, miserable lives

"Weeping in the playtime of the others,
In the country of the free,"

unless the community is willing to give them the opportunity to fight for health.

The treatment is the least part of the hookworm work. It is like fighting back the ocean waves with a broom to treat a few cases here and there.

The main object must be education as to prevention by proper modes of living.

2. Every year there are numerous schools closed and demoralized on account of occurrence of smallpox. I do earnestly urge that you set a date not later than September opening of all the schools this year for a vaccination requirement, or if you can't agree to this, then make it compulsory upon every teacher and pupil of every school in any township to be vaccinated immediately upon the appearance of a case of smallpox in said township. Make it compulsory whether whether they stop their children from school or not.

3. I want to recommend the erection of a new modern brick building at the County Home. I believe that a modern steam-heated, brick building sufficiently large to accommodate all the probable inmates for several decades to come can be erected at a cost of ten thousand dollars, and I believe that almost enough can be saved in fuel and other wasted energy to pay interest on that amount.

4. I want especially to urge the erection of four small cottages, or open air rooms, for the accomodation of a few tubercular patients, at the County Farm. The situation on the southeast corner of the farm among the pines is an ideal one, and the educational value would be immense as an object lesson, to all of the people of the county, in addition to the help given a most needy class of sufferers.

Four such buildings together with all outside accomodations necessary such as fencing, etc., can be put up at a cost not exceeding one hundred dollars each.

Gentlemen, I ask you earnestly to give ear to these four great general measures of progress and advancement, and if possible let's make a beginning today.

If these requests seem too far in advance of our county's present place, financial or otherwise, remember that some man or men have ever been leaders in every advancement for the better the world has ever made, and in conclusion I can do no better than to call your attention to the words of the Psalmist: "Behold, he that keepeth Israel shall neither slumber nor sleep."

Respectfully,

January 13, 1913. G. M. COOPER.

—*Sampson Democrat,* January 22, 1913.

ANNUAL REPORT OF THE COUNTY SUPERINTENDENT OF HEALTH OF ROBESON COUNTY

Since March 1, 1912, the County Superintendent of Health has devoted his entire time to the duties of the office. A short summary of the work accomplished is as follows:

Ten *post mortem* examinations were made; seventeen examinations for commitment to asylums; 258 visits to the County Institutions; 196 homes quarantined; 18 homes fumigated; Court House fumigated four times; 114 visits made to schools; 10 per cent of pupils found to be hindered in work as a result of eye, ear, nose and throat defects; 15 per cent of pupils afflicted with hookworm disease; parents were notified of defects and arrangements made for treatment; 60 per cent of school children found with neglected teeth; a very small per cent of the rural schools have a toilet of any kind, sanitary arrangements needed; 15,000 pieces of literature on preventable diseases distributed, sanitary conditions of 600 homes inspected; 800 people vaccinated; 600 free treatments administered for hookworm disease; 300 letters written; 125 health talks made; 70 newspaper articles furnished; 5,000 miles traveled attending to official duties.

In 1911 there were about 350 cases of typhoid fever in the County with 37 deaths, in 1912 there were about 65 with 7 deaths. The death rate in 1911 from all causes was about 990. For 1912 it was reduced about 10 per cent, which means a saving of nearly 100 lives. The National Conservation Commission places the average value of a human life at $1,700. At this rate the county has saved in lives $170,000, to say nothing of the difference in loss on account of sickness last year as compared with this. With a vital statistics law to check up the results of health work every month, and with better coöperation of the people, which we will surely have, there is no reason why the death rate cannot be reduced 15 per cent during 1913.

Since a large per cent of diseases and deaths are preventable it follows that those having the power to prevent them are responsible for loss of life if this power is not used. Preventable disease is subject to public control, and death from such disease, therefore, is a public crime. We are taught that the sin of omission is as great as that of commission; no one should forget the sixth commandment. The average citizen of Robeson County will not object to health work from a financial standpoint if he is willing to give one cent per dozen for human lives.

Respectfully submitted,

B. W. PAGE, M.D.

SOME REFLECTIONS ON THE TUBERCULOSIS PROBLEM

By Richard H. Lewis, M.D., LL.D.

As practically everybody now knows, tuberculosis is the most fatal of all the diseases to which flesh is heir, it therefore occupies the first place in the regard of those whose business it is to combat these enemies of man. This has been emphasized .by the world-wide crusade that has been actively waged for the past decade or two against this particular malady. An immense amount of work and millions of dollars have been expended for its prevention and cure. The results have been encouraging but we have hardly made more than a beginning. The fight will be a long one extending through at least several generations even if it should in the end be finally won. In considering the problems therefore, we should bear this fact in mind.

While tuberculosis is incontestably a communicable disease and its spread depends in the first instance on infection, direct or indirect from another case of the disease on the introduction into the system of the tubercle bacilli, that is not the only element in the process. The infected person must be susceptible, the soil must be suitable or the seed will not take root, or they will be destroyed by the defensive powers of the body. It is more than probable that comparatively few escape infection at one time or another during their life time and yet for lack of this susceptibility, or owing to the possession of that vital force which is at the bottom of what we call immunity only one seventh, if so many, of the whole population die of tuberculosis. It behooves us, therefore, while never letting up for a moment on our insistence upon the proper care of the sputum, which is unquestionably the chief factor in the spread of the disease, to pay more attention to the promotion of that vigorous health which means immunity—more attention, in short, to general hygiene. To quote from a recent speech of that witty and instructive speaker and writer, Dr. Woods Hutchinson, "To use a hibernicism, the best way to prevent a thing is to stop it before it begins." In other words we must begin our work on the individual before he is even begotten, by discouraging in every way the marriage of the tuberculous, at least to make similarly predisposed, and minimize as far as possible the reproduction of those constitutional weaknesses that make their possessor an easy prey to infection. Then we should carefully look after the welfare of the growing infant, not only by guarding against specific infection through milk from tuberculous cows, but by seeing to his sanitary surroundings and hygienic management in order to give him a good running start in the race of life. Owing to their extensive distribution in widely scattered homes this cannot be done by an official, but must be attended to by the family physician, who should be the immediate health officer of every family in his clientelé. But when the children are segregated in the schools they come within practical reach of the health officer, provided we have one sufficiently well paid to justify the expenditure by him of the time required to examine and instruct them. And this leads me to the statement of the main idea I have in mind. It is this: That in the circumstances—not as they may be in places we read about—not as we would like to have them—but as they actually are in this good old State of ours, the best work we can do in the campaign against tuberculosis is to help in every way to secure for as many communities as possible, efficient health officers with such salaries as would justify the requirement of all the time of good men.

Since the county is the sanitary unit in our health organization, let us consider the county superintendent of health. As it is, with a very few honorable exceptions, his health work is a side issue in his professional life and is limited to inspection of the jail, county home and convict camps, with medical treatment of the inmates, and to seeing to, in a more or less thorough manner, the quarantining of the infectious diseases named in the statute and the following disinfections after such diseases. He does not go outside of this routine work—he cannot afford to, for he must live, and the pitiful salary usually paid would not justify him in doing it. But suppose he is elected for his whole time and a fair salary paid him, what would be the result? In the first place he would feel that his office was both an honorable and responsible one, and realizing that he was charged with the promotion in every way of the health of the people of his county he would put his heart into his work. The present duties of the county superintendent would occupy only a few days in each month and the remainder of his time could be devoted to medical inspection of school children, and a sanitary inspection of the school house and its surroundings, followed by a talk on practical health topics, clinics for tuberculosis and hookworm, short articles in the county paper and occasionally public addresses, especially to teachers' meetings, or other gatherings of adults. In other words his most important work would be that of a teacher of hygiene and sanitation for his county. The main obstacle to sanitary progress has been in the past and will continue to be for many years to come the ignorance and indifference of the people on the subject and our first duty is to strain every nerve to remove this obstacle. With an enlightened public opinion great things can be done—without it but little. While the distribution of literature in the form of pamphlets and newspaper articles does great good, no doubt there is nothing like the personal touch, the direct instruction that could be given by the county superintendent.

What has been said in regard to the county superintendent applies with equal force to the city health officer. One good man paid to devote his whole time to the work, cordially supported by a sympathetic board of health or board of aldermen, and supplied with the necessary assistants for the detailed work in the way of sanitary inspection, medical inspection of school children, milk and meat inspection, quarantine and disinfection and house to house visits by a district nurse, with the understanding that the responsibility rests on him, would be worth more than any number of ideal ordinances and a divided responsibility among several.

As tuberculosis is the most common and most fatal of all preventable diseases the efforts of the health officer would of course be largely directed specifically against that disease. We cannot afford a man to devote himself solely to tuberculosis, but in this way we would obtain a competent man who could and doubtless would do much for the anti-tuberculosis cause. Part of the time of a trained man paid to do the work and held responsible for it would be far more effective than the present volunteer and more or less haphazard methods. It is inherent in human nature to tire after a while and lose interest in any undertaking and it is the part of wisdom, therefore, to take at the floor of popular enthusiasm steps to fix in permanent form the machinery for carrying on the work automatically, as a matter of routine duty, and not as a matter of volunteer effort. And the first, most important and most practicable step in my judgment, is the county or city health officer paid for his whole time.

It must not be forgotten that while the largest, tuberculosis is not "the only pebble on the beach." There are others and as many of them as there are preventable diseases, and besides the object of hygiene and sanitation is not only to prevent sickness and postpone death but to reduce the number of weaklings and build up a vigorous and efficient population. In the light of this self evident situation and in the present state of public opinion and of our financial resources we cannot, with rare exceptions, hope for the establishment of agencies to combat the one disease of tuberculosis, paid out of the public treasury. And we cannot reasonably desire it, even as champions of this special movement, because tuberculosis is so inextricably entangled with other features of the general health problem that it cannot properly be disassociated from them—and should not be. But the "whole time" health officer is in reach, as has already been demonstrated in several of our progressive counties, and we must help to secure more of them.

For many years I have thought that in the anti-tuberculosis campaign the proper proportion between prevention and cure has not been observed. In an address similar to this before an international association of health officers in 1906 I took this position, and again in a paper read at the Charlotte meeting of our Association. And the more I think about it the more thoroughly am I satisfied of the correctness of this view. The old proverb of "an ounce of prevention is worth a pound of cure" is worn and frazzled from much use, but notwithstanding it is just as true to-day as when it was first uttered. And that represents about the right proportion—fifteen to one.

When we realize that of those treated at public expense under the most favorable circumstances only about half are nominally cured—I say nominally because a large proportion discharged as cured are merely arrested cases—that each one of these represents a cost of about $400; that barely more than one per cent of the tuberculous population is reached; that the treatment of the disease is little more than a mode of life; that thousands of homes receive practically no benefit from this expenditure, the disproportion is manifest. And the reason for it is plain. In those afflicted with the disease we see their sufferings and our sympathy is excited. In consequence, money to help them can be obtained much more easily than for prevention, which is so much more important and far reaching. The results of preventive measures are not apparent but the disease is manifest and appealing. As I have often said, the main obstacle to the progress of sanitation is much the same as in religion—a want of faith—"the substance of things hoped for, the evidence of things not seen." If we really and truly believe, we will act upon that belief. To beget among the people this necessary faith in preventive medicine we must have preachers regularly appointed and paid to serve as leaders in the propagation of the gospel of health—not only to do their own individual work but to enlist and direct the voluntary auxiliary forces that stand ready for service to their fellow men under intelligent and efficient leadership.

During the past few years rapid and gratifying progress has been made in public health work in our State, but the next and longest step to be made will be the securing in increasing numbers, competent men whose first and only public duty shall be to serve with mind and heart in promoting in every way in their power the health and consequent happiness of our people.

Let us give every aid and encouragement to this movement so fraught with good to all.

CAUSE AND COURSE OF TUBERCULOSIS

By Drs. D. W. and Ernest S. Bulluck, Wilmington, N. C.

No subject of current interest is receiving more universal attention than that of tuberculosis. From the most remote ages it has been known to be the most destructive of all the scourges. It was, however, only about twenty years ago that the German scientist, Robert Koch, discovered the cause of the disease. With this as a working basis, so zealously has the subject been studied that in all its phases it is perhaps the best understood and therefore the most controllable of all human affections. Its occurrence is world wide, and there is no land or genus of living creatures that is not susceptible to its attack.

Our country pays an annual tribute of one hundred and eighty thousand lives and two hundred billion dollars to the ravages of this disease. In the cities, every seven people who die, one death is due to tuberculosis, and four of the remaining six are found well advanced with the disease. During the past year it caused the opening of four thousand seven hundred and fifty new graves in North Carolina.

Some nationalities are more vulnerable to the disease than others. For instance, the Irish are about three times as susceptible as our native Americans and the negro four times more so. Again certain occupations are more favorable to its occurrence for barbers are affected twice as often as ordinary tradespeople, book-keepers three times, and stone cutters four times more frequently. In nearly all persons, dying from whatever cause, its presence is found and no one reaches the age of forty who has not been affected at some time in his life.

The enormity of its victims may be well shown by a comparison with our late Civil War, for in the United States more people die in a single year of tuberculosis than were killed on both sides during the entire four years of that awful struggle.

There are four general families of tubercular germs; those which live in birds, fish, animals and man. While any member of the family may live in any other member of the hosts, it is far less frequent than is the case of organisms that are adapted to a particular soil. Thus the tuberculosis from cows may effect man, but it is less liable to do so than similar organisms from another man. When seen through the microscope these germs resemble short segments of fine red thread, and their length is such that placed end to end it would take eight thousand to equal an inch. While small of stature, it has a vitality exceeding in many ways that of the strongest man, for it is hardly affected by freezing and will live for an hour in water heated to a degree in which man can live only a few moments, and, further, when deprived of its food, may live from two to six months, a feat unequaled by any man.

The organism does not multiply outside of the body so that all tuberculosis must come directly from one who is affected with the disease. In ninety-five out of a hundred cases this occurs from man to man, and the remaining number of cases are contracted in such ways as sleeping with domestic pets or from the milk of tubercular cows. In about half the cases the germs are inhaled directly into the lungs, in a fourth they are swallowed and make their entrance through the intestinal tract and from here to the lungs and other parts of the body. A large per cent of the remaining quarter, which is made up of the less important avenues of entrance, enter through diseased tonsils. The most potent means of transition is by way of the sputum of those suffering from the disease; which means, remember, practically that everybody at some time in their lives scatter the germs.

A well advanced consumptive will throw off in the sputum daily from one to four billion organisms; most of these die in the first few hours, some fall in the sun's rays and are killed in a few minutes, others fall in dark moist places and live for months, still others fall upon the carpet where they may infect for at least six weeks after their deposit; most important, perhaps, is the dissemination by the fine droplets of moisture constantly ejected while talking. The fine particles of fluid may easily be seen by breathing on a mirror. When in conversation nearer than four feet apart this spray is constantly exchanged and inhaled by those who stand this near. These fine droplets are wafted about by the air currents in a room for an hour or more before they reach the floor so that the moisture in the lungs of each person will have passed on to all those in the vicinity. While dining, this conversational spray is projected upon all the food upon the table.

If so many organisms enter the body under the best conditions, the question naturally arises, why do not all become infected and, in a few months, deplete the world of its population. The reason this does not occur is that a rather large number of organisms are necessary to cause infection. Again, there is a substance made in the blood that is capable of destroying or preventing the growth of the germs, and lastly, the respiratory apparatus is lined with hairlike brushes that by their movement sweep all substances deposited thereon toward the mouth whence they are expectorated. When all these forces work normally and the inspired organisms are not too strong or numerous their invasion is successfully combated and health is maintained. Suppose now that the organisms are too numerous by reason of more people breathing and polluting the air, for, where people are crowded together, as in cities, the disease is four times as frequent as when they are widely separated as they are in rural sections. Suppose the daily intake of organisms were the same, but the power to ward them off was lessened by alcohol, overwork or some of the large number of diseases, then, do the germs become victors in the eternal battle for existence. Having gained entrance and found a soil favorable to its multiplication they increase rapidly in numbers. Their mere presence in the tissues would, left to itself, do no harm, but the waste products of the daily germ life are thrown off into the surrounding tissues and being poisonous cause the tissues to die. Having been primarily defeated the body is still resourceful, and at once the blood begins to make increased quantities of the substance that will neutralize the tubercular poisons and render them harmless; at the same time a host of white corpuscles are deposited at the place of infection, where they invade the colony and destroy many tubercular germs.

The body must, however, take no chances, and by a complex nervous action the tissue immediately surrounding the infection take on a rapid growth until a dense fibrous capsule is formed about the infected area. This capsule is impenetrable and confines the germs to one particular place. Into the interstices of this circumventing capsule is deposited lime salts which makes it still more compact and causes a shrinking that cuts off the blood vessels that enter the area. The germs are now effectually sealed and the area is said to be cured. While the body has won this battle, its owner has gone on delightfully ignorant of the fact that his life has been in danger. Suppose now on the other hand that the individual was less fortunate, then does the blood make less poison antidote, send fewer and weaker white corpuscles to the front to fight the foe, and throws up a weaker fortress of tissue to incapsulate the battlefield. Then do the organisms wax strong and increase in numbers, about thirty minutes being the time from birth to the maturity of the germ. This increases the organisms, the space they occupy, and the quantity of poisons which are made. The neutralizing substance of the body can render only a part of the poison harmless, and the remainder kills the tissue with which it comes in contact. It thrives on this dead tissue, which is nonresistant to its growth, and enlarges its field of endeavor. While resisting to its utmost the area becomes so large that it cannot be incapsulated, so some of the poisons enter the blood and cause fever while the rapid combustion of fat, a means of defense, causes a loss of weight. The tissue killed in the lung now becomes liquified, and being a deadly poison the body resists absorbing it into the blood so that it must find some other means of escape. This it does by enlarging until it comes in contact with an air tube into which it ruptures and is expectorated. The sputum contains deadly organisms, a large number of which will find their way into the lungs of others. A cavity is thus formed in the lung, and, while resisting this point of attack, the remainder of the lung has fallen an easy prey to the intake of the germs, so that many parts of both lungs are now affected. The infection is no longer confined to this part of the body, but is swallowed and affects the intestines or flows freely in the blood by which it is carried to all parts of the body, colonizing and forming new points of infection at every place where the already flagging resources of the body may be overcome. From now on this greatest of all man's enemies makes short work of him, while its subtle poison deludes him into believing that he has not the disease or that he will surely recover.

Terrible and frequent though this scourge may be it is not as hopeless as it might appear, for even under the worst conditions many cases are cured and in all of us this occurs from time to time without our knowledge.

The necessities for recovery are an early recognition of the disease, general intelligence, a good, strong, vital resistance of the body, and ability to create those surroundings which are favorable to recovery, and, most important, a tenacious persistence which never wanes in face of apparent disaster. Having gained this knowledge so eagerly man has passed it on to man so that today all mankind knows of tuberculosis, and with this knowledge comes a desire for its early recognition.

Comforted by the fact that heredity plays an unimportant part, and that those who are infected are not doomed from birth has done much to encourage people so afflicted. By the ways and means that have been provided by the zealous organizers who have espoused the cause of humanity, have championed the cause of these unfortunate creatures, have created an anti-tuberculosis movement which though only about ten years old has decreased the death rate in Massachusetts and Philadelphia 40 per cent and New York 50 per cent.

Under good conditions 60 to 70 per cent of moderately advanced cases are cured. During the past few months an Asheville physician has brought forward a serum with which one may be vaccinated against tuberculosis, and, if the process comes up to its present expectation, more than half the battle will be won against this dread disease.

It therefore behooves each of us to do all in our power to favor the progress of this great anti-tuberculosis movement.

REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS*

By Joseph H. Pratt, M.D., Boston, Mass.

In the treatment of consumption little things are great and the little thing that is greatest is rest. On the cover of the record book in which each of my tuberculosis patients writes down the details of the day is printed this sentence: "Rest in the open air is the medicine that cures consumption." This has been the guiding principle in the work of the Emmanuel Church Tuberculosis Class since its organization in July, 1905. The success we have had during its six years of existence must be attributed in large measure to the rest treatment. The patients were all poor and they lived in a large city situated on the seacoast in a harsh and supposedly unfavorable climate. Dr. Osler, who has examined our records, says in the latest edition of his text-book that better results have never been published.

The wave of pessimism regarding the curability of consumption that is now sweeping over the country is an unpleasant contrast to the confident optimism of a few years ago and is equally unjustified. Today I read in a report just issued by the Social Service Department of the

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*This Article is reprinted from the June, 1911 number of the *Journal of the Outdoor Life*.

Boston Dispensary that "home treatment of the positive active case, which was never considered more than a makeshift for something better, has practically been abandoned."

It seems only yesterday that lecturers and writers active in the tuberculosis campaign were giving the public the idea that a dispensary or a day camp, with milk and eggs furnished to the needy, and instructions in regard to fresh air and disposal of sputum given to all, would offer a means of cure to the poor consumptives who were in the curable stage. Patients flocked to the dispensaries by the hundreds. Where are the vast majority of them today, and what do their families now think about the curability of consumption? The failure can be attributed mainly to two causes: First, the workers in the dispensaries and elsewhere forgot the words of Brehmer, the founder of sanitorium treatment, that consumption, although a curable disease, is a difficult disease to cure; and secondly, they did not appreciate the importance of absolute rest and the danger of exercise in the active stage of the disease. Since the time of Sydenham, the great English physician, who lived in the seventeenth century, exercise has been advocated in the treatment of consumption. And with what result? Even today its dangers and the wonderful curative power of rest in the open air are not generally recognized.

Brehmer, although he recognized fully the importance of out-of-door life, believed that the disease developed only in individuals who had small weak hearts. Misled by this theory he made the patients take long walks along the mountain sides with the object of strengthening the heart. He realized the need of carefully supervising the exercise, and the danger of over-exertion. In the last chapter of his work on the treatment of consumption, published in 1887, he gives the tragic story of a young American engineer who exhausted himself again and again by long walks and various forms of physical exertion under the mistaken idea that thereby his health would be restored. Relapse followed relapse, but blind to his folly this young man shortly before his death wrote a letter to a Glasgow journal in which he advised all consumptives to follow his example and take as much hard physical exercise as possible. He was convinced that the exercise had been very beneficial, and he believed it would have cured him if begun before his disease had reached the hopeless stage. Brehmer realized as we do today that this poor fellow advanced himself from the curable to the hopeless stage of the disease by excessive exercise.

Although no one has emphasized more clearly than Brehmer the danger of getting over-tired, this pioneer in the open air treatment died unconvinced of the value of rest as a curative agent in consumption.

Dettweiler, an assistant physician in Brehmer's sanitorium at Görbersdorf, saw many patients injured by exercise. Stormy days, of which there are many in the mountains of Silesia during the winter, were spent indoors. Gradually the value of rest in the open air in the cure of consumption dawned upon the mind of Dettweiler. Later in his sanitorium at Falkenstein, he built resting halls which were open on one side like our country horse sheds. Here the patients spent many hours daily on the comfortable reclining chairs of Dettweiler's invention. At night the patients returned to their bedrooms, and "the window was usually not quite closed." Knowing the fear that still exists in Germany of draughts and night air, we are safe in concluding that at night the fresh air treatment was interrupted. The results obtained by this form of treatment were better, so far as I can discover, than those obtained by Brehmer or any of his followers.

One of the chief advocates of exercise has been Sir Hermann Weber, of London, who as late as 1885 wrote as follows: "Exercise is one of the most powerful and essential means of cure. It is as necessary as air and food because it enables the invalid to take both in a sufficient quantity to improve the nutrition by taking up fresh material and removing the wastes and thus to fight a battle with a fair chance of success. Without exercise I should not like to treat phthisis." He advised riding on horseback, skating and tobogganing as useful exercise under guidance. He cautions against over-exertion. "One mistake," he says, "often destroys the fruit of months and years of judicious management." What success did this distinguished physician obtain by his exercise-cure? Fortunately he published the results of nearly thirty years' experience with this form of treatment. Of his private patients eight per cent recovered and twenty-one percent were improved, while in his hospital practice only two per cent recovered and fifteen per cent improved. Compare these results with those of Dettweiler as given by Dr. Lawrence F. Flick in a paper published in this country in 1890, the same year that Weber's statistics appeared. Of 600 patients 483 were improved, that is 66 per cent improved, and excluding the advanced cases 81.5 per cent. Results obtained by Turban, who used a stricter form of rest treatment than Dettweiler were even better. Among the patients treated by him, 80.4 per cent of those admitted in the first stage, 48.8 per cent in the second, and 17 per cent in the third, were well one to seven years after their discharge from the sanitorium. So far as I can find, no such success has been attained by any one who has employed exercise as a factor in treatment in the active stage of the disease. The widespread ignorance in this country of the harmfulness of exercise in the febrile stage of consumption is as shocking as it is surprising. Patients are still sent to Colorado for a change of climate and are told by their home doctor that when they arrive they should get out and "rough it." Dr. George R. Pogue, a Colorado physician, who writes in a way that carries conviction, says: "The few who survive this vigorous exercise are a small percentage of the number who employ it. I have been through it and I know whereof I speak. It took me two years to get over one day's duck hunting which I took on the advice of a physician who has since succumbed to the exercise cure." Pogue states that he has the histories of sixty-two patients with tuberculosis seen during a period of five years who took active exercise. Of this number forty-three died and only two showed a prospect of ultimate cure.

In the first people's sanatorium in America, established at Saranac Lake in 1884, by Dr. Trudeau, violent exercise was recognized as injurious and rest out-of-doors was enforced in all cases which showed any rise of temperature.*

Dr. Trudeau alone in the North Woods did pioneer work little influenced by the currents and counter-currents of German teaching. In a letter to me he says: "I was one of the first, if I remember, to advocate the rest cure, and for many years had to stand my share of abuse about it. I remember distinctly getting up in medical meetings and being sat upon on all sides by the gentlemen who said 'rest was very well, but how was a consumptive to keep up his appetite unless he exercised?' Then my own men here did not believe in it at first, and it took some time for them to accept the fact that the best way to treat a tuberculosis process which shows any degree of activity is by rest. At any rate, I want you to know that I have always been thoroughly in favor of rest, and that even now I find myself standing out against the new doctrine of curing people by exercise. I cannot help but feel that although, of course, there are cases that are much benefited especially by graded exercise, the fact still remains that when a tuberculous process shows any degree of activity rest is the safest plan to follow. I know I have hurt nobody by rest, but I am quite sure I often have by allowing them to exercise. Perhaps this was due to want of caution on my part, but I should say, as I always have, when in doubt it is safer to rest your patient, and I know in this you will agree with me."

One of the few American writers who have endorsed and adopted the methods of Dettweiler in this country is Dr. Babcock, of Chicago, whose text-book on Diseases of the Lungs contains an admirable article on rest in the treatment of phthisis.

The rest halls which are such a prominent feature of the European sanitoriums are rarely found in connection with American institutions.

Rest and exercise are relative terms and so different are the generally accepted views in America from those held on the continent of Europe that even some of our writers who have emphasized the importance of rest, such as Stanton and Pogue, would be regarded in Europe by the chief advocates of exercise as extremists who permitted exercise when rest was indicated. Stanton would allow a patient to be out of bed the greater part of the time if the afternoon rise in temperature is only to 100 degrees. He would begin exercise when the evening temperature was under 100 degrees. Pogue from whose paper I have already quoted, says that by rest he does not mean actual confinement to bed, except in those cases in which there is a very acute process accompanied by high fever and rapid pulse.

Paterson, whose employment of graduated labor at the Frimley Sanitorium in England has aroused so much interest, follows definite rules in regard to rest which his imitators in this country would do well to follow. The Frimley Sanitorium, it should be understood, admits only carefully selected patients who have had at least three months' treatment in the Brompton Hospital. "If the temperature has been 99 degrees F. (mouth) or over during the week preceding the admission to the sanitorium the patient is put to bed so long as the

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*In the *Journal of the Outdoor Life* for June, 1911, I stated that Dr. Trudeau was a follower of Brehmer rather than Dettweiler. This was the inference I drew from his interesting article in the first volume of the *Zeitschrift fur Tuberkulose*, but it was not correct.

temperature remains 99 degrees in the case of men, or 99.6 degrees in the case of women. * * * After the temperature has been normal for a week or ten days the patient is allowed up for dinner, but returns to bed as soon as the meal is finished." Paterson's results show that many arrested cases of tuberculosis can do heavy work for at least a limited period of time without injury provided there is very careful supervision and the "danger signal," that is a temperature of 99 degrees, is not overlooked. The most recent advocate of graduated exercise in the treatment of tuberculosis is Philip of Edinburgh, who has followed the same methods as Paterson. No definite results have been published, and there is nothing in his paper that would lead one to expect that graduated labor would yield as good results as the prolonged rest treatment in the open air.

Advocates of exercise have long been in the habit of supporting their opinions by theories rather than by facts. There is no definite evidence that the toxins discharged into the circulation by exercise have a beneficial effect. It seems more probable that these bodies increase the susceptibility of the tissues than that they confer immunity. It is interesting to note that the latest paper on this subject published by one whose knowledge of immunity gives value to his opinion, Cobbett, of Cambridge University, strongly favors the view that rest rather than exercise promotes recovery. As Cobbett puts it, "the cause of recovery from infectious disease is the acquisition of specific immunity," and "resistance to tuberculosis, like resistance to other infections is a very specific matter and does not necessarily go hand in hand with what is regarded as the general bodily health."

So much for theories. From personal experience I am absolutely convinced that under the strict rest treatment out of doors patients recover more frequently and more quickly, and that relapses are less common than under any other form of treatment. To those who are inclined to doubt this statement I would give the same advice than John Hunter gave to Jenner, "Don't think; try," and I am tempted to finish the quotation, "be patient, be accurate," for months of rest may be necessary and the effect of exercise must be accurately observed.

During the past seven years we have treated in the Emmanuel Church Tuberculosis Class 139 patients, not including the present members. Twenty patients were referred to sanitoriums and hospitals after they had been under treatment a varying length of time; eleven moved to other parts of the country. Fourteen left the class against advice; nine of these patients were so much improved that they considered themselves well and refused to continue the treatment. Eleven were discharged for disobedience. Of those who followed the treatment faithfully the disease was definitely arrested in 75 cases and wage-earning power was restored. Of this number 69 were well and able to work on June 10, 1912. Twenty-nine patients were admitted in the first stage of the disease and all recovered. There were twenty-seven recoveries in the second stage and no deaths. In the far advanced stage the disease has been arrested in eleven patients and nineteen have died. Among the seventy-five who left the class with the disease arrested, only four deaths have occurred. Four relapsed during the past year and are again taking the treatment in the class. Among those sent back to work from

1906 to 1911 there were eight in whom symptoms returned. Six of these recovered a second time in the class and are now at work. That the results are even better than those of Dettweiler and Turban is explained by the fact that, from the outset, appreciating the importance of Millet's discovery of the value of night air, nearly all our patients spent their nights as well as their days in the fresh air out of doors. This enabled us to use with benefit a more prolonged rest treatment in bed than that advised by Dettweiler. The strict rest treatment has been continued until all symptoms indicating activity of the disease have disappeared. In one far advanced case no exercise was allowed, except weekly visits to the class meeting, for a period of twenty-three months. It would be natural to suppose that, at the end of twenty-three months without physical exercise, the muscles would be weak and the patient would be simply overloaded with fat and in poor physical condition. When he entered the class he weighed 115 pounds and at the time of which I speak his weight had increased to 146 pounds. His child was suddenly taken ill and it seemed necessary for him to help in the housework. For over a month he worked several hours a day without any bad effects. The work did not tire him and his weight, after an initial fall of two pounds during the first week, remained constant. He recovered completely and has now been working a year. Last summer he did hard work every day on a farm and lost no weight.

The progress toward recovery may be slow, but it is usually steady and uninterrupted. In the treatment of far advanced cases a year or more of rest may be required. I do not know why the heart and body muscles do not become weak, but it is a clearly demonstrable fact that patients actually become stronger, and I have never seen circulatory disturbances result from long continued rest in the open air. The increase of muscular strength was strikingly shown by a patient who on the day he began the rest treatment could scarcely drag himself up the steep hill that led to his house. After a month's rest in bed he started for his first class meeting, but he had not left the house many minutes when he remembered that he had forgot his record book and without any difficulty climbed the hill that had tired him to the point of exhaustion a month before.

Absolute rest is indicated in non-febrile cases, if symptoms of activity are present; and I have demonstrated repeatedly that it yields remarkable results. That exercise may lead to the extension of the disease in patients who have no fever, I have convincing evidence. That exercise is a two-edged sword is admitted even by those who advocate it. Everyone with experience in the treatment of consumption warns against over-exertion. Yet no one can tell how much exercise can be taken in the active stage of the disease without danger because the amount of exercise that will produce fatigue varies with each patient. If unavoidable exertion is followed by rest in bed for several days, harm usually can be averted. The visit of patients to the class meeting is quite unjustifiable on theoretical grounds, whether one holds that exercise is harmful in active tuberculosis or whether one believes in graduated exercise as a therapeutic measure. The rest that follows the trip probably prevents serious injury, but I believe that in a few instances it has delayed recovery.

In private practice I have seen as good results from prolonged rest in bed out of doors as in the tuberculosis class. The superiority of the rest treatment ever the ordinary hygienic-dietic treatment was never more strikingly shown than in the following case. In the fall of 1908 I was consulted by a gentleman aged forty-three, who complained of loss of appetite and weakness. He had been treated the entire summer by a specialist in stomach diseases, but without any improvement. His past history was interesting and instructive in connection with the question of the relative value of rest and exercise. In 1892, after an attack of "influenza," he lost weight and strength. About six months later a cough developed insidiously. He was told by his physician that his lungs were slightly affected with tuberculosis. The patient took the climatic treatment—first in Colorado Springs and then in California. In 1894 his cough and expectoration almost ceased. Over-exertion was followed by a return of the symtoms. He became weak and ill. His weight dropped to less than a hundred pounds, and the fever became continuous. A consultation was held and he was told that the only thing that could possibly save him was the climate of Switzerland. Although in a far advanced stage of the disease he was taken from California to Switzerland. Fortunately he was placed under the care of a wise physician who knew the value of absolute rest, and to him, rather than the climate, this patient owes his life. The treatment was rest and feeding. For a year after his arrival in Switzerland the fever persisted, but he gained during this period twenty pounds in weight. For two years he did not go to the dining room. He continued to improve, and after three years spent in Switzerland he went to England and entered a sanitorium. Here the exercise cure was followed. What was the effect on this patient? Although he gained in weight and reached a maximum of one hundred and thirty pounds he began to have a slight fever after long walks. From that time on he began slowly to lose ground. From 1901 to the time I saw him seven years later he lived a very quiet life. He gradually lost weight and strength in spite of taking excellent care of himself. His winters were spent in California. He rested several hours daily, and never went out in the evening. He always slept by an open window and never engaged in any business. Occasionally he would have a slight fever, but when he consulted me his temperature had been normal for four months. For years his appetite had been poor. On examination I found his temperature and pulse were normal. His weight was 111 pounds, the lowest it had been since leaving Switzerland. There was a slight cough and the sputum contained many tubercle bacilli. Now I would like to ask the advocates of the ordinary hygienic-dietic treatment what course they would recommend to such a patient? He had followed conscientiously the modern fresh air treatment and was slowly growing worse rather than better.

I placed him in bed out of doors under the care of a good nurse. There he remained from November 4th to March 16th, a period of twenty-two weeks. He left the hospital weighing 134 pounds, which was four pounds more than he had ever weighed before. His appetite was rather good and he felt much stronger. His sputum had decreased in amount, but tubercle bacilli persisted. I wonder if the critics of the rest treatment have ever observed the effects of more prolonged rest in a non-febrile patient. They would say: "Here is a man loaded down with fat. He is far from physiologically fit. With exercise he will lose weight rapidly." Such was not the case. This patient spent two weeks at Atlantic City taking gentle exercise and his weight increased to 138 pounds. Two years have passed and he continues to be in good health, although careful to avoid any over-exertion. When I saw him last January he weighed 133 pounds. He told me then that he came to town almost daily and that this winter he had been to the opera and theatre for the first time in twenty years.

I could cite the record of other patients equally encouraging. I will refer briefly to one case because I hope that others may follow the same treatment in similar cases. When I first saw M. O. in August, 1907, he was the picture of despair. After seven months' treatment in a state sanitorium he returned to his work as a letter carrier. At the end of five weeks he was obliged to stop work on account of a profuse hemorrhage of the lungs; and from April to August, 1907, he had between forty and fifty similar attacks. They were sometimes so profuse that the attending physician feared he would die from loss of blood. He had no fever, however, and under the strict rest treatment he recovered and graduated from the tuberculosis class in February, 1908. When I last saw him two years later he said that he had not lost a day from illness and had not raised any blood. He is still well and working (May, 1911).

Prolonged rest in bed out of doors yields better results than any other method of treating pulmonary tuberculosis. Patients will have a better appetite and take more food without discomfort and gain strength and weight faster than patients with active disease who are allowed to exercise. Complications are much less frequent. When used in the incipient stage recovery is more rapid and surer. Many cases of moderately advanced tuberculosis that die under the "hygienic-dietetic" and the "graduated exercise" treatments can be saved by prolonged rest. The disease in a fair proportion of far advanced cases can be arrested, but it may be necessary to continue the rest treatment for a year or more.

After satisfactory progress has been made and the activity of the disease seems checked I allow patients to sit in a reclining chair one or more hours daily. Then they are permitted to take dinner with the family, and if this exertion produces no rise of temperature formal exercise is soon begun. On returning from a walk the rectal temperature is taken and observations made every fifteen minutes for an hour if it is elevated. If it does not drop to 99.4 degrees in fifteen minutes the walk is interdicted or shortened. As accuracy of observation is all important it is necessary that the temperature should be taken by the rectum. At first the walk is of five minutes duration. Every week it is increased five minutes until a half hour's walk is taken. Then the walk is lengthened more rapidly, but I rarely insist that a patient shall walk more than one or two hours daily. A cold rub by means of a wet mit, is given in the morning, at first by an attendant, later by the patient himself. Patients who are not very sick take a neutral full tub bath (90-95 degrees) of ten or fifteen minutes duration every afternoon. I allow patients without fever to go to the lavatory if it is on the same floor.

That a specific immunity is established by the prolonged rest treatment is shown by the infrequency of relapses among patients who are taking exercise, and among those who have returned to work. Of the sixty-four discharged from the tuberculosis class with wage-earning power restored nearly all returned to indoor occupations. Some are compelled to work under unhygienic conditions. One patient is employed at hard labor in a foundry, another who had far advanced phthisis now works stacking books in the cellar of a publishing house.

In closing I wish to endorse the statement of the American physician, Hilleary, that I have never known rest, no matter how prolonged, to do any harm, while the exercise brings more tuberculous patients to grief than all other things combined.

THE NEGRO AND PUBLIC HEALTH

By G. W. Paschal, Wake Forest College, Wake Forest, N. C.

The problem of sanitation, public and private, in North Carolina, as in other Southern states, is complicated by the presence of a large negro element in our population. In our State approximately one person in three is colored. This proportion is much exceeded in many of our towns and in the eastern half of our State. Hence it is evident that any scheme of sanitation and health improvement that does not include the negro and his peculiarities is doomed to fail of complete success. I shall try in this article to call attention to some of the factors that must be reckoned with and make a suggestion or two, recognizing that complete solution cannot be attained or even indicated, but hoping that, as the work progresses among our white people, the proper methods of dealing with the colored will become more evident.

Part of the problem of sanitation as concerns the negro is due not to race, but to the fact that as a class he constitutes the poorer part of our people, and the problem with him is in this respect the problem of this class everywhere. But there are other complications of the problem due to the racial peculiarities of the negro, and it is to these that I shall try to confine myself.

In the first place, let us not lose sight of the fact that the place of the negro in our government is not yet one of perfect adoption, and in fact is one entirely inconsistent with the democratic spirit to which our white citizens conform. He has no voice in determining what the laws shall be, and hence regards laws much as in former days the slave regarded the orders of his master. If the law is based on a definite Bibical tenet taught by his preacher, he has some conscience in regard to it, but otherwise he has very little.

It is but natural that where no usual moral problem is involved he should have respect not so much for the law as for the penalties; and so when he finds it convenient to disregard the law he often does so without scruple. This is one of the inevitable consequences of having among us a race unequal in civic and political attainments and privileges, a consequence which has its effects in other matters. But in the matter of public health laws it can easily be seen what a hindrance this general attitude of the negro will be. He must be made to see that such laws are his laws, that he is to be protected, or rather is to protect himself, by their enforcement, else he will never obey them. He will, on the other hand, render nugatory much of the work done for public health among the whites. Before I complete the paper I will offer one or two suggestions as to means of securing his interest and coöperation.

Nor must we lose sight of the fact that the negro as a race is still undeveloped. He may be learning to read and write in our schools but it will take many years to remove his inheritance of ignorance. He has not yet learned to think and reason. And in the matter of disease, especially, the negro is grossly ignorant. He knows nothing of its nature, great numbers believing that many diseases are due to enchantment and witchcraft. He knows nothing of their cure and often finds in some ridiculous nostrum a panacea for all his ills. It needs no demonstration to prove that such ignorance will prove a very serious obstacle towards advancement in sanitation.

Another drawback to sanitation among negroes is their inheritance of dirt. Before he left his native home in Africa the Negro was used to dirt, and during his period of bondage in this country only a dirty hovel was usually furnished him by his master. The cleanly home is often found now, but by far the greater number of negroes are still content with squalid and dirty surroundings, and are disregardful of unsanitary and infectious conditions. They are thus a source of danger not only to themselves but also to their more cleanly neighbors and to the whites whose dwellings are in the vicinity. Since I have been writing this paper a physician of our town who is interested in sanitation has told me that he is now treating a case of typhoid fever in a hovel which is almost a cesspool of filth and swarming with flies and mosquitoes ready to carry the infection to the nearby house which is the most costly residence in our town. It is evident that any effective system of sanitation will have to take into account the uncleanly surroundings in which many negro families live and seek to help the negroes remove them. I say help, for unless the coöperation of the negroes can be secured the task is hopeless.

Again, the negro's attitude towards life must not be disregarded. Many make the egregious mistake of thinking that because the negro is light-hearted he is happy. Perhaps they were once as free from care as they are now supposed to be. But the truth is that at present the greater part of the negroes among us are despondent. The dark pall of unequal privileges and opportunities hampers their aspirations for individual advancement. Hence the negro comes to set a low estimate upon the value of life and health. He has not much to win by being well and not to lose by dying. As for those who are near and dear to him there is no prospect sufficient to make him care for their future as the white man cares for his own. So he is ready to run the risk of contracting some contagious disease and to spread the infection as Samson's foxes spread the fire among the cornfields of the Philistines. Hence also the great amount of the sexual impurity and consequent disease so prevalent and destructive among our city and town negroes. These are evils that no amount of laws or supervision can correct. The only thing that will avail will be to give the negro a more hopeful outlook. In place of his despondency we must create hope. And here is where the health officer must be joined by the statesman and the preacher. If the undeveloped race among us is to be kept in an atmosphere of despair the nemesis of a thousand ills will come to curse us, and not the least of these will be the ineffectual sanitary laws.

Another racial element in the problem is that the negro is more susceptible to certain diseases than the white man. One of these is tuberculosis. I have been interested for many years in looking over the records of deaths among white and colored in the BULLETIN OF THE NORTH CAROLINA STATE BOARD OF HEALTH. One of the most uniform and striking facts revealed in these figures has been that the percentage of deaths from tuberculosis among the negroes is nearly twice as great as among whites. This may be due to the fact that the negroes are ill fed, ill housed, ill clothed, rather than to any racial peculiarity. But as I have intimated above, even these things are partly due to race. But one thing is certain, tuberculosis is one of the infectious diseases which is very prevalent among our negroes, and will be very hard to get rid of among them. And yet any one can see that both tuberculosis and other infectious diseases which have their lair among the colored population, can never be controlled unless the field of effort is that of all the population, white and black. Any other scheme of work will be futile.

I have said enough to indicate the nature of the problem with which the presence of the negro element of our population has complicated matters. Perhaps I may be pardoned for suggesting some methods of dealing with it.

First. I would suggest that the interest of the negroes themselves be enlisted. Sanitation is manifestly a hopeless task unless we can do this.

The preachers of that race can help and I believe will. The negro preacher has great influence with his race. If he becomes interested in sanitation he can impart that interest and will take a pride in doing so. A very patent illustration to show that sanitary laws can be made effective among primitive peoples by giving them a religious sanction, is found in the sanitary laws of the Mosaic code. To make these laws effective they were given with the authority of the Hebrew God. It is not supposed that the negro preachers have any such wide influence as Moses had, but in their positions as teachers and prophets of the race they can do much, and the securing of their interest will be a step forward.

A further step will be to gain the help of the negro school teachers. In common with other teachers of the State they ought to be required to know a certain amount of sanitary science as prerequisite to teaching in any grade. Furthermore they and all other teachers ought to be required to teach the elements of this science. But in addition the active and enthusiastic interest of these teachers of negro children ought to be won, and I think may be won.

Finally in incorporated towns where there is a negro physician, he might be made a subordinate health officer to coöperate with the white officer in looking after sanitation among members of his own race. With an officer of their own the negroes would come to feel that this public health is a matter in which they have an interest and an obligation. Then half the battle will be won.

And in conclusion let us all who are interested in public health, both layman and physician, remember that what will do the negro good will do the white man good; that a healthy negro population will be an economic asset to both his race and to the whites, that a diseased negro population means loss to both races; and that health among the whites is conditioned upon health among the negroes. And let us not be afraid to exercise a little Christian charity towards the lowly race.

Wake Forest, N. C.

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